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ABSTRACT

This inservice guide for elementary school teachers provides a competency based nutrition course to be used to increase parent/community participation in nutrition education activities and to lead parents toward providing better nutrition for themselves and their children. The curriculum is presented in six lessons which cover the following topics: the nutritional needs of children and adults; food choices and health; consumer awareness of the nutritional food supply value; factors influencing food choices; components and purpose of the Type "A" school lunch; and review of nine popular fad diets. Each lesson is elaborated in terms of instructions, objectives, supplemental materials, contents, activities, and suggestions for evaluation. Appendices provide over 20 handouts items; a sample parent/community agenda, a sample work shop survey, guidelines for producing a newletter, and supplementary lesson plan activities. (Author/MP)

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SNAC
San Mateo Nutrition Activity Curriculum
"Swing Into Nutrition"

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PS 011896

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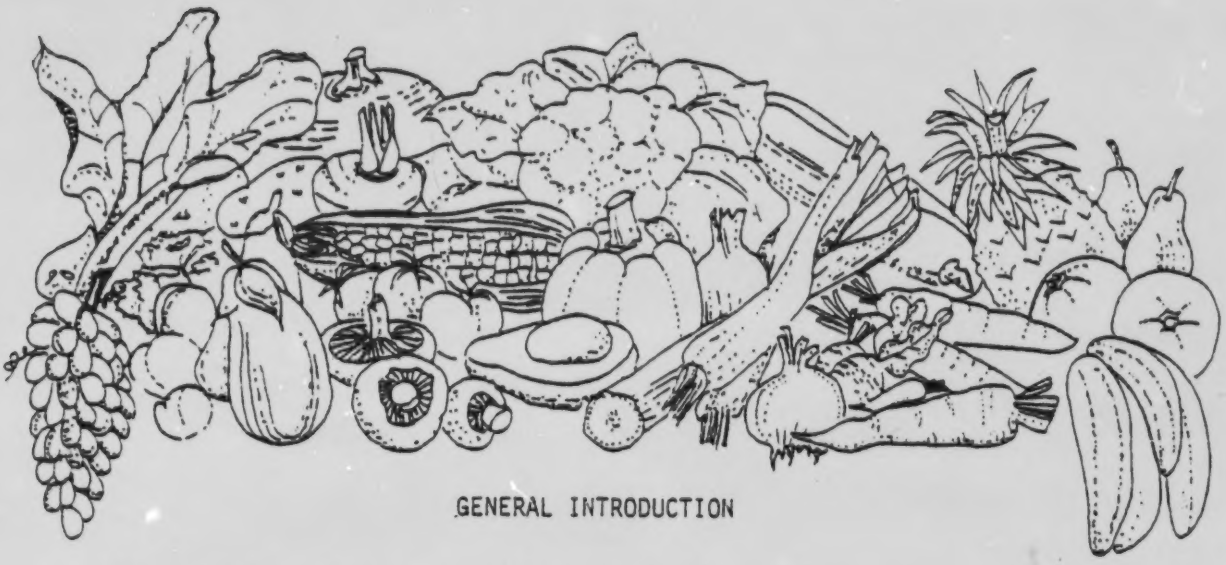


GENERAL INTRODUCTION

Nutrition Education starts with you! The San Mateo City School District has designed a program in the elementary grades to integrate nutrition education into the general curriculum.

The goal of this program is to prepare elementary grade students to develop and improve healthful food habits.

Two major components of parent/community involvement in nutrition education include participation in student nutrition activities and participation in parent/community education activities including but not limited to attendance at parent/community education programs.

The primary objective of this parent/community involvement guide is to supplement student participation in oriented nutrition education activities by providing a competency based nutrition course for parent/community.

More specifically the guide has been developed to assist nutrition project staff.

- To motivate parent/community to use their existing skills and knowledge, to upgrade the diets of themselves, students, and other family members.
- To increase the nutrition knowledge and awareness of nutrition among parent/community.
- To illustrate the significance of nutrition to the growth, health, development and productivity of the individual.

The content of the parent/community education program is based on the nutrition education concepts in the California State Health Framework. They are as follows:

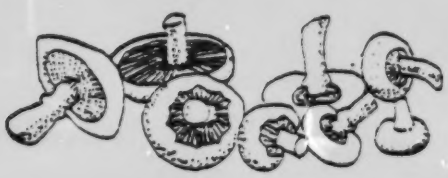
- Daily food intake is related to the attainment of optimal health.
- Life styles, peers, and individual family resources reflect similarities and differences in food choices.
- The food industry offers many employment career opportunities.
- Effective utilization of existing resources may enhance potential for satisfying individual and family nutrition needs and wants.
- The quality and safety of foods are influenced by handling, processing, and preparation.

Each of the parent/community lessons contains all of the information to teach that lesson. The materials needed for the lesson is numbered and is in the Appendix.

All of the lessons and activities mentioned in this Parent/Community Guide have been designed, tested, evaluated, and articulated by Project nutritionists. They have proven affective for all participants.

So join us and .....

"SWING INTO NUTRITION!"



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SAN MATEO CITY SCHOOLS NUTRITION EDUCATION PROJECT

(SNAC)

"SWING INTO NUTRITION"

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SAN MATEO CITY SCHOOLS NUTRITION EDUCATION PROJECT

PARENT/COMMUNITY

IN - SERVICE GUIDE

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PARENT/COMMUNITY

IN - SERVICE GUIDE

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LESSON PLAN NUMBER	LESSON PLAN TITLE AND ACTIVITIES	LESSON OBJECTIVE	PAGE(S)
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NUTRITIONAL NEEDS OF CHILDREN

INTRODUCTION:

This first parent/community meeting deals with the nutrient composition of food and the nutritional needs of children and adults. It also introduces the standard of the Recommended Dietary Allowances and relates them to individual needs. The concept of food groups systems to simplify selection of balanced diets is introduced.

OBJECTIVES:

After actively participating in this parent program, you will be able to do the following:

1. Identify physical signs of good and poor health in a school-aged child.
2. Explain the relationship between nutrition and health status.
3. Identify the Recommended Daily Allowances as a guide to planning diets for healthy people of all stages of life.
4. State that all people need the same nutrients but in varying amounts.
5. Give examples of and state reasons for differing nutrient needs of children, teenagers, adults, and senior citizens.
6. Distinguish between the phrases "malnutrition" and "under and over-nutrition".
7. Designate factors other than hunger that influence personal and family member's food preferences and choices.
8. Recognize ways in which these concepts can be used in planning meals for family.

MATERIALS:

Assorted nutrition resources for display and evaluation
"Recommended Dietary Allowances" handout (Appendix pp. 49-51)
"Recommended Calorie Intake" handout or overhead transparency (Appendix page 52)
"Recommended Protein Intake" handout or overhead transparency (Appendix page 53)
Suggested films:

- "What's Good To Eat" (Project SNAC) - Dairy Council of California
- "Food, The Color Of Life" Available from Film Library 31 Roberts Hall, Cornell University, Ithaca, N.Y. 14850 Allow 4 weeks. $7.50 plus postage and handling.
- "How To Choose A Reliable Nutrition Book Or Article" handout (Appendix page 54)
- "Nutrition Resource Handbook" booklet (Appendix pp 55-59)
- Physical Signs Of Good and Bad Health" handout (Appendix page 60)
- Normal Growth And Behavior Patterns Of School Children That Affect Their Food Habits" handout (Appendix pp. 61-62)
- "Ima Gonna ....." handout (Appendix page 63)
- "What Do You Think?" handout (Appendix page 64)

CONTENT:

A. Physical and Emotional Growth

Physical growth is determined by heredity and nutritional status of a child. During the periods of rapid growth--infancy through adolescence--eating habits profoundly affect ultimate physical development in terms of size, strength, and ability to perform physically and intellectually.

The following are visible signs of ill health which may be related to nutritional status:

- small for age
- week or fragile bones
- susceptibility to diarrhea, colds, infections
- overweight/underweight
- decayed teeth
- tired and lacking energy

The relationship of nutrition to emotional health and intellectual development is becoming increasingly clear. Hungry or poorly nourished children (and adults) may have difficulty concentrating.

Deficiencies of certain nutrients may affect emotions, responses, and reactions depending on the nutrient involved.

B. Definition of Terms

"Nutrition" is the science of how the body uses food for growth and repair of tissue, regulation of body processes, and energy.

"Malnutrition" refers to problems in functional ability or development caused by overnutrition or undernutrition.

"Overnutrition" refers to nutrition problems due to excessive intake of calories or nutrients (e.g., obesity).

"Undernutrition" refers to nutrition problems related to inadequate calories or nutrients including "dietary deficiencies" and more severe "nutritional deficiencies".

A person who eats a diet which provides adequate amounts of necessary nutrients and calories without excess is said to have "good nutrition" habits. Children do not instinctively select the right foods to meet their nutritional needs. They need to be taught how to choose foods wisely.

C. Nutrition Needs of Children and Adults

Children and adults need 40 or more essential nutrients to maintain health, to get energy, and to regulate body processes (heartbeat, digestion, etc.).

The Recommended Dietary Allowances (RDA) are a guide to the recommended daily amounts of 17 nutrients plus calories for men, women, and children. The recommendations are based on the most up-to-date research and are reviewed continually

CONTENT: (continued)

and updated every five years. The RDAs are made for healthy, moderately active people. A 30% margin of safety is built into each recommendation.

Example of differing energy needs by age:

a) 10 yr. old boy, 54" tall, 44 lbs. = 2400 calories
51 yr. old man, 69" tall, 154 lbs. = 2400 calories

b) 10 yr. old girl needs 400 calories per day more than her 35 yr. old mother. (see graph)

Protein requirements are highest during periods of growth; such as, infancy through adolescence, pregnancy and while breast feeding (see graph)

D. Factors Influencing Individuals Food Choices

Why do people eat what they do? A few factors include these:

1. We eat because we are hungry.
2. We eat for emotional security.
3. We eat to belong to a group (cultural, peer).
4. We eat to be in style.
5. We eat to have pleasant taste sensations.
6. We eat to be sociable.
7. We eat to save time and money.
8. We eat to achieve status.
9. We eat foods that are available to use either because of where we live or because of their cost.

Too often the above reasons do not add up to a nutritious diet that meets the body's needs. These are eating habits and they are very hard to change.

Learning about what's good for us is not always enough to improve eating habits. Too often "false information" is learned about vitamins, organic foods, etc. This information is passed around on radio, TV, magazines, by well-meaning friends and by writers untrained in the science of nutrition. Some are "food faddists" and quacks. Sometimes the information is more destructive than no information at all. Careful evaluation of resources is necessary to get reliable nutrition information.

E. What Information Can You Really Use At Home?

Food Grouping Systems: 4 Food Groups

ACTIVITY

MOTIVATION:

- Display of nutrition books and pamphlets.
- Ask parents to decide their nutrition concerns about themselves and their families. (Keep a list)
- Distribute "Physical Signs of Good And Bad Health" and "Normal Growth And Behavior Patterns Of School Children That Affect Their Food Habits". handouts

MOTIVATION: (continued)

- Have parents look them over while you explain them.
- Have each parent write down the most recent nutrition information they learned and the source.
- Distribute "How To Choose A Reliable Nutrition Book Or Article" and "Nutrition Resource Handbook" to each parent for the next nutrition information they want.

INVOLVEMENT:

Elicit descriptive phrases that represent poor and good nutritional health in a child. Make a list and discuss. Discuss the terms malnutrition, over and undernutrition, and good nutrition.

Distribute RDA sheets. Have parents look at nutrient names listed and find themselves and one or more family members. Ask "how useful would this information be to you in meal planning?" (Not easy to use, too much information.) Go over the "Recommended Calorie Intake" and the "Recommended Protein Intake" using an overhead projector.

Explain that this information (RDA) has been used to develop a simple food grouping system for meal planning. The system includes four basic food groups which include only foods which are good nutrient sources.

Introduce the film "What's Good To Eat". The film shows the relationships between nutrients and food groups. The Four Food Groups will be learned by all students during elementary grades and parents can help by learning about them too.

Show "What's Good To Eat". Follow with discussion of nutrient types and function and the Four Food Groups.

Following the film discussion, introduce the U.S. Dietary Goals and how they would affect food choices within the four food groups; e.g., low fat food preparation, selecting whole grain breads and cereals, use of unsaturated fats over saturated fats, reduction of salty foods, such as, snacks and salted meats.

Have parents write down their two favorite and least favorite foods, and one each for their child. Ask them to report why they or their children choose the food and make a list of factors influencing food choices and add to list generated by parents.

CLOSURE:

- Ask parents to write down one change they would like to make in their or their families food habits on a piece of paper headed "Ima Gonna....."
- Ask for volunteers to share their ideas and discuss. Parents take "Ima Gonna....." sheets home.
- Explain that to find out if the workshop was useful and enjoyable, and if the leader got the points across adequately, they will be asked to fill out a little evaluation form--no names.

SNACKS

Choose for Health

2

INTRODUCTION

This session deals with selection of snacks to promote health. To assist participants in the identification of health promoting snacks, diet related health problems common in school aged children are discussed. Parent/Community are given an opportunity to read labels to identify healthy snacks. The emphasis is on more natural and fewer highly processed snacks.

OBJECTIVES: After participating in this program, parents will be able to do the following:

1. Explain the major function of carbohydrate in the body.
2. Distinguish between sugars and starches.
3. Name four or more sources of sugar and how they appear on labels.
4. Utilize ingredient labels to identify high-sugar foods.
5. Suggest alternatives to highly sugared snack and breakfast foods.
6. Explain the role of iron in blood formation.
7. Name iron deficiency anemia as an iron deficiency disease.
8. Select high iron snacks.
9. Explain the term "nutrient density".
10. Select nutrient dense, low calorie snacks.
11. Evaluate typical snack foods for nutrient density.
12. Classify nutrient dense foods into the appropriate food groups using the Four Food Groups System as a guide.

MATERIALS:

5 cereal boxes - sugar coated and non-sugar coated
Fruit and vegetable nutritional labels
Teenage Comparison Cards - National Dairy Council (examples in Appendix pages 65-72)
"Hidden Sugar In Foods" - handout (Appendix page 73)
"Questions Most Frequently Asked About Sugar" - handout (Appendix pages 74-76)
"Snack Suggestions" - handout (Appendix pages 77-80)
"Amount Of Sugar In Well-known Cereals" - poster (Project SNAC)
"Calories vs. Nutrients" - overhead transparency/poster (Appendix page 81)
"Sugar Content Of Commercially Available Breakfast Cereals" - handout (Appendix pages 82-84)
"What Else Do You Need To Know About Iron?" - handout (Appendix pages 85-86)

MATERIALS: (continued)

Optional:

- Filmstrip Snack Facts (Project SNAC)
- "Your Snacks - Chance or Choice?" - poster National Dairy Council (Project SNAC)
- "Too Much Sugar" and "Sweet Talk About Sweetened Cereals" - handouts (Appendix pages 87-93)

CONTENT:

Sugar/Carbohydrate

1. Carbohydrate function - energy.
2. Sugars and starches are two forms of carbohydrate. The body uses only sugar for energy in the form of glucose (brain or blood sugar). The body breaks starches and other sugars down to glucose through digestion. Sugars are usually sweet tasting, starches are not.
3. Chemical names for sugar, end in "ose". (Sucrose, lactose, fructose, glucose, dextrose, maltose, etc.) Sugars appear in other forms as ingredients (syrup, honey, dextrins, corn syrup).
4. Ingredients are listed in order of weight. The first ingredient is present in the greatest quantity. If sugar or another name for sugar is listed first, the food has more sugar than any other ingredient. Often several forms of sugar are added and the names will appear throughout the ingredient list so that it appears that small amounts of sugar are included. However, by combining all the "sugars" the predominant ingredient may be sugar even though the ingredient listed first is a grain.

Iron

1. Iron is a mineral for the formation of healthy red blood cells which can carry oxygen to all the body cells. Every cell needs oxygen.
2. Iron deficiency anemia is a nutritional deficiency in which there is too little iron in the blood. A person with iron deficiency anemia may be more tired, pale, irritable, and less perky than normal.
3. A "dietary deficiency" refers to a diet which is low in any nutrient and a long term dietary deficiency may lead to a more severe "nutritional deficiency" in which symptoms of the deficiency appear. For example, these are some nutritional deficiency diseases that most people have heard of:

Vitamin C - scurvy
Vitamin A - night blindness
Vitamin D - rickets
Vitamin B_1 - beri-beri
Niacin - pellagra
Protein and calories - starvation

CONTENT: (continued)

4. Iron sources from food: Meat, seafood, dried beans and peas, egg yolks, dried fruits, enriched and whole grain products, dark leafy greens.
5. Iron supplements: Recommended that iron supplements in the form of pills tonics be taken under doctor's advice. Overdoses of iron are stored and can be harmful in some cases. Foods can supply adequate iron if chosen carefully, especially when iron enriched breads and cereals are eaten.

Nutrient Density

1. "Nutrient Density" a term which refers to the ratio of nutrients to calories. "Nutrient dense" foods are high in nutrients and fairly low in calories.
2. "Calorie Dense" foods are high in calories and low in nutrients. (Also called "empty calories".)

Nutrient Dense	Calorie Dense
Lean meat, fish poultry	Soft drinks
Eggs	Sugars
Milk	Cakes, pies, cookies
Whole grain or enriched breads and cereals	Alcohol
Fruits and vegetables	Fried foods
	Fats and oils
	Butter, margarine

Four Food Groups and Nutrient Dense Foods

1. Basic nutrient dense foods can be classified into four food groups: Milk, meat, bread/cereal, fruit/vegetable. Calorie dense foods are called "extra foods" and do not fit into any of the four food groups.

Serving number and size from Four Food Groups.

Group		
Milk	3 servings(3-11 yrs) 4 servings(11-19 yrs) 2 servings(20-40 yrs)	8 oz. milk 1 oz. cheese 1½ cups cottage cheese 1 c. pudding or custard
Meat	2 servings	2-3 oz. meat, fish, poultry 1 c. cooked dried beans or peas ½ c. nuts 4 tbsp. peanut butter

CONTENT: (continued)

Vegetable/ Fruit	4 servings	½ c. cooked) 1 c. raw) average
(1 vitamin C source every day) (1 vitamin A source every other day)		
Bread/cereal	4 servings	1 slice bread 1 muffin ½ hamburger bun ½ c. cooked cereal, rice, noodles 1 c. dry cereal

ACTIVITY

MOTIVATION:

- Display of food packages and labels, fresh fruits and/or vegetables and one low-nutrient, high-calorie snack.
- Teenage Comparison Cards.
- Show "Calories vs. Nutrients" transparency.
- Show filmstrip "Snack Facts".
- Ask each participant to name two snacks eaten recently; leader mades list.

INVOLVEMENT:

Divide parents into groups of two or three. Each group reads one cereal box ingredient list and writes all forms of sugar listed and reports back (2 minutes).

Leader describes nutritional similarity of all sugars, function of sugar in the body, and health problems in which the over-consumption of sugar is implicated (tooth decay, overweight, heart disease, diabetes).

Hidden Sugars

- hand out "Hidden Sugars In Foods" and "Questions Most Frequently Asked About Sugar".
- discuss hidden sugars and average per capita sugar intake (125 lbs) per year. Handout "Sugar Content Of Commercially Available Breakfast Cereals" sheet.
- evaluate parent's snacks for hidden sugar. Discuss low-sugar alternatives to highly-sugared snack selections.

Iron: Nutrient Density

- discuss from function and sources. Handout "Iron Fact Sheet" information.
- have parents read bread and cereal ingredient labels to look for iron and discuss reasons for enriching grain products with iron.
- define "iron deficiency anemia".
- give each group of 4 parents 8 comparison cards to evaluate and make a list of high and low iron snacks.

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INVOLVEMENT: (continued)

- discuss dangers of indiscriminate iron supplementation. Refer to comparison cards and show example of and define nutrient density (low calorie-high nutrient). Give parents a set of comparison cards to separate into snacks of high and low nutrient density. Discuss choices among the group.

Four Food Groups

- introduce Four Food Groups and explain nutrient-dense rule and serving size requirement. Ask each participant to name foods in each group in order to make a class developed chart for the Four Food Groups and "other" foods. ("other" foods are not nutrient dense; they are calorie dense and/or low in total nutrients.)
- conclude that foods included in the Four Food Groups are nutrient dense, relatively low in sugar, and many are high in iron.

CLOSURE:

. Have parents suggest low-sugar, high-iron and nutrient dense snacks.
. Handout "Snack Suggestions".

EVALUATION:

. Ask parents to tell something they learned today.
. Teacher observation of snack selection and ability to classify foods into Four Food Groups.
. Did parents appear interested and was each person actively involved during the session?

Suggested time: 1 hour

ADDITIONAL RESOURCES:

. Mayer, Jean; "Charting A Course To Good Nutrition With Your Children", Family Health, August 1976
. "Fast Food Calorie Counter" Eating Is Okay, Romson Associates Publisher, Inc., 1976

CONSUMER AWARENESS

3

INTRODUCTION

The third parent/community session deals with consumer awareness of the nutritional value of the available food supply and how to use available information to meet individual and family needs. Participants will learn how to use nutrition information by reading labels and will identify additives and their functions and discuss the pros and cons of additives. The overall theme will be the role that the food industry and the consumer have in providing and selecting adequate diet.

OBJECTIVES: After participating in this parent program, you will be able to:

1. List two reasons why certain foods require a nutritional label.
2. Utilize nutritional labeling to make food buying decisions for selected nutrients.
3. Define the term "food additive".
4. Distinguish between "intentional" and "incidental" food additives.
5. Recognize the origins and purpose of the G.R.A.S. list of food additives.
6. Identify two or more advantages and disadvantages of food additives.
7. Define the role of the FDA in consumer protection.
8. Explain the controversy relating hyperactivity to consumption of food additives.
9. Suggest methods of limiting additive intake.
10. Identify community resources for information on nutritional labeling and additives.

MATERIALS:

For the Leader

Film: "Read The Label - Set A Better Table"; U.S.D.A. (Project Snac)
Variety of food labels: brand name, generic
"G.R.A.S. List" - handout (Appendix pg. 94) and transparency

For the Participant

"We Want You To Know About Nutrition Labels On Food" - FDA handout (Appendix pp. 95-96)
"Primer On Food Additives" - U.S.D.A. booklet (Appendix pp. 97-104)
"U.S.R.D.A. vs R.D.A." - handout (Appendix pg. 105)
"Resources For The Consumer" - handout (Appendix pg. 106)

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CONTENT:

NUTRITIONAL LABELING

. What must be labeled?

- Food products that have added nutrients.
- Food products for which a nutrition claim (low cholesterol, protein rich, etc.) is made on the package or in ads.

. Who requires the labeling?

- Food and Drug Administration.

. Where?

- A nutrition information panel must be to the right of the principle label on a box or can.
- On small containers or fresh foods, the information may be printed in another panel or listed in a leaflet or poster in the store.

. Nutrition information included on label.

- Food value for one serving. (Serving size is determined to be the amount normally consumed by an adult male who takes part in light activity.)
- Number of servings per container.
- Calorie content per serving.
- Protein content per serving (in grams).
- Fat content per serving (in grams).
- Percentage of U.S. Recommended Daily Allowances (U.S. RDA) per serving of the following nutrients:

Protein	Riboflavin
Vitamin A	Niacin
Vitamin C	Calcium
Thiamin	Iron

- Optional information is the amount per serving of:

Sodium
Saturated fat
Polyunsaturated fat
12 other vitamins and minerals

WHAT IS THE U.S. RDA?

. The U.S. RDA are nutrient recommendations for protein, vitamins and minerals for the general population. They are based on the Recommended Dietary Allowances (R.D.A.) but are used only for nutritional labeling and do not take differences of size, age, sex, or activity into consideration as do the RDA's. The U.S. RDA is a standard against which the nutritional value of all processed foods can be compared.

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CONTENT: (continued)

. To use the U.S. RDA listings: Add up the percentage of RDA's for the foods you eat. If you find the total is 100 or more, you can be sure you are meeting your nutritional needs plus a little extra. The U.S. RDA is planned with a safety margin so that a total of 65 to 70 percent is enough for most people.

FOOD ADDITIVES

. Definitions:

- "Food Additives" are components of food added directly or indirectly such as from the package, machinery, or any other source.
- "Intentional Additives" are added on purpose such as colors, flavors, nutrients, or anti-caking agents.
- "Incidental Additives" have no planned function in food, but become a part of it during some phase of processing, packaging, or storing.

. Food Additive Types:

- Nutrient Supplements, e.g. vitamins, minerals.
- Non-nutritive sweetness, e.g. sugar substitutes.
- Preservatives - to prevent spoilage.
- Emulsifiers - to improve smoothness.
- Stabilizers and thickeners.
- Flavors, e.g. natural and artificial flavors.
- Bleaching and maturing agents, e.g. in flour.
- Colors - natural and artificial.

FEDERAL AGENCIES INVOLVED IN FOOD SAFETY

. FDA - enforces the Federal Food, Drug, and Cosmetic Act. All new food additives must be proven safe through research by the food industry. The FDA evaluates all the research and if convinced of an additive's safety, permit its use in food. In addition, FDA checks safety and sanitation in food factories.
. Environmental Protection Agency (EPA) - establishes safe residue levels for pesticides on crops.
. U.S. Department of Agriculture (U.S.D.A.) - inspects meat and poultry.
. Federal Trade Commission (FTC) - has jurisdiction over false and misleading food advertisements.

TESTS OF ADDITIVE SAFETY

. Responsibility of food companies, FDA reviews all data before additives can be used.
. G.R.A.S. List (Generally Recognized As Safe Additives) A list of food additives used without apparent safety hazards used prior to 1958. Additives brought into use since 1958 must be approved individually. Occasionally

CONTENT: (continued)

substances are removed from the list by the FDA in light of new evidence. Examples include cyclamates, saccharine, and some artificial colors.

HYPERACTIVITY AND FOOD ADDITIVES CONTROVERSY

- Dr. Ben Feingold, allergist, suggested from observation of children on salicylate free diets, that hyperactivity (poor attention, restless, irritable) could be controlled in certain children by elimination of certain food additives, especially colorings and flavors.
- Since his book, Why Your Child Is Hyperactive was published, he has attracted many adherents to his additive free diet. However, behavioral scientists, chemists, and others in the scientific community were unwilling to accept the premise as absolute until the scientific method was applied to research involving the possible relationship of additives to hyperactivity. Extensive studies have failed to confirm absolutely that elimination of additives (colors) prevents hyperactivity, but there is some indication from a study at Kaiser Hospital that a small number of highly susceptible children may respond favorably to elimination of specific food colorings. The complex nature of the study design required years of research and the final answers are still not available to determine the relationship of hyperactivity to artificial food colorings.

ACTIVITY

MOTIVATION: Ask the following questions:

- Do you think the consumer has a right to know what is in the food available in the supermarket?
- Do you use the information available to make food buying decisions? How?
- How do you feel toward additives in food?
- Where would you go for nutrition advice on information?
- Show the film "Read The Label-Set A Better Table". Following the film discuss consumer uses of nutritional labeling.

INVOLVEMENT:

- Pass out food labels for a variety of similar foods. Have groups compare nutritional value of foods for size of serving, calories, nutrient content, and price per serving and report back which one is a wiser choice and reasons why it is.
- Pass out "We Want You To Know About Nutrition Labels On Food" and discuss briefly.
- Have participants look at label for "additives" and make a list. Discuss regulations of additives and show G.R.A.S. list. Explain FDAs role in protecting the consumer. Explain

INVOLVEMENT: (continued)

the difference between the G.R.A.S. list and other additives. G.R.A.S. substances have been used for years and are "Generally Recognized As Safe". They maybe used without testing because they have been in use prior to 1958. Additives developed since 1958 must be approved before use.

- Ask parents to orally list two or more advantages and disadvantages of food additives. Discuss function of additives. Review nutrition labels to determine functions of additives listed.
- Pass out "U.S. R.D.A. vs. R.D.A." handouts. Have participants review and briefly explain the difference.
- Elicit parents' opinions and knowledge of the hyperactivity/additive relationship. If parents are unfamiliar with the topic, explain briefly and summarize the Feingold hypothesis briefly. Conclude that additional scientific studies need to be done to determine the effect of additives on hyperactivity.
- Have parents suggest ways in which the consumption of additives by family members can be reduced if desired.
- Pass out "Primer On Food Additives" and discuss briefly.

CLOSURE: Pass out "Resources For The Consumer" and discuss.

EVALUATION: Ask how many will use nutrition information on nutrition labels, how many plan to modify food choices to reduce intake of food additives, and where they would go to get information on food additives?

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LOW COST - HIGH PROTEIN FOODS

4

INTRODUCTION

This parent/community program addresses the topic of economical high protein cooking, protein value of meats and meat substitutes, and vegetarian diets. Indirectly, the sesson addresses factors influencing food choices such as cost, nutritional value, personal tastes, culture, and ecological concerns.

OBJECTIVES: After participating in this session you will be able to:

1. State the primary functions of protein in the body.
2. Name animal and vegetable sources of protein.
3. Explain the difference in protein quality of animal and vegetable proteins.
4. List two or more combinations of vegetable protein sources to yield a high quality protein.
5. Recognize the need for high quality protein intake for cell formation.
6. Recognize that the protein consumption of most Americans is in excess of needs and explain reasons.

MATERIALS:

Books: Laurel's Kitchen, Diet For A Small Planet, Recipes For A Small Planet — Project SNAC

Suggested Audio-visuals (optional)

Film: "Diet For A Small Planet" — Project SNAC
Filmstrip: "Vegetarianism In A Nutshell" — Project SNAC

Variety of nutrition labels including meats, dried beans and peas.

Variety of legumes (dried beans and peas, lentils, peanuts and soybeans)

"Beans, Peas, And Lentils" - "High Protein-Low Cost Recipes" - booklet (Appendix pp. 107-113)

"Summary Of Complementary Protein Relationships" - handout (Appendix pg. 114)

CONTENT:

A. What the body needs (nutrients).

- water
- energy (calories from carbohydrate, fat, protein, or alcohol)
- protein
- fat soluble vitamins (A,D,E,K)
- water soluble vitamins (B complex, C)
- minerals

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CONTENT: (continued)

B. Energy is expressed in calories. One gram (¼ 8 oz.) of the "energy" nutrients provide:

- carbohydrate: 4 calories/gram
- fat : 9 calories/gram
- protein : 4 calories/gram
- alcohol : 7 calories/gram

C. Protein is used primarily for maintenance and repair of body tissue. During periods of growth additional protein is needed for growth of new cells.

D. Protein is used for energy if the intake of carbohydrate or fat is too low to provide for energy needs. If necessary, the body will use its own protein sources (muscle tissue) to provide energy. Protein eaten in excess of the body's need will be stored as fat.

E. Carbohydrate and fat are said to "spare" protein, meaning protein can be used for tissue building and maintenance rather than for energy.

F. The body is 18% - 20% protein, second only to water as the most plentiful substance. (Muscles, skin, hair, nails, eyes, enzymes are mostly protein.)

G. Almost every American consumes far more than the required amount of protein.

H. Proteins are made up of amino acids linked end to end in long chains. There are twenty types of amino acids. The body can produce all but eight of these. These eight are called "essential amino acids" because they must be supplied by the food you eat. Without a good balance of the eight essential amino acids, growth is impaired. Foods from animals have a good balance of these eight essential amino acids. These are called <u>high quality</u> or <u>complete</u> proteins.

I. Plant foods also contain protein but usually the protein is low as one or more of the eight essential amino acids. Therefore protein from plant foods are called <u>low quality</u> or <u>incomplete</u> proteins.

- combining two or more low quality or incomplete proteins can make a high quality or complete protein combination; this is called protein complementing. Examples of complementary pairs are grains and legumes (dried beans and peas and peanuts), legumes and milk, rice and sesame or sunflower seeds.
- complementary proteins must be eaten at the same meal for maximum efficiency in protein formation and growth.
- a thorough understanding of complementary protein can provide a delicious, nutritious, low-cost diet.

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ACTIVITY

MOTIVATION:

- Ask participants to write down five favorite high protein foods beginning with the most favorite. Then have them number their cost from cheapest to most expensive.
- Collect lists and see how many non-meat protein sources are listed.
- Hold up a series of 10 food pictures, packages, or samples and have group rate them in terms of protein content from highest to lowest protein content.

INVOLVEMENT:

- Review the content on basic nutrients and energy sources, protein function. (Content: A through G)
- Divide the class into groups of 4 or 5 and give each group a series of 20 nutrition labels for a variety of foods including meats, dried beans and peas.
- Have groups record serving size and grams of protein per serving. The group can report their findings orally.
- Show film or filmstrip. Hand out the "Summary of Complementary Protein Relationships" information sheet.
- Discuss how the foods they evaluated prior to the film can be combined to form complementary protein. (Content: G through I)

CLOSURE: Hand out "Beans, Peas, and Lentils" - High Protein-Low Cost Recipes.

EVALUATION: Ask participants to write down two complementary protein foods. Ask how many are interested in trying some complementary protein recipes and why.

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YOUR CHILD'S TYPE "A" LUNCH

INTRODUCTION

This parent/community program deals with the Type "A" school lunch. Parents/community are given the opportunity to see the components and purpose of the Type "A" school lunch.

OBJECTIVES: After participating in this session, you will be able to:

1. Identify the five component parts of the Type "A" school lunch.
2. State why meals are served at school.
3. Name the four food groups and the six major nutrients.
4. Plan a Type "A" menu.

MATERIALS:

"Pizza Palace" slide/tape show prepared by 5th grade class (Project SNAC)
"School Lunch Menu" - handout (Appendix pg. 115)
"Type "A" Lunch" - poster (Appendix pg. 116)
"Type "A" Lunch Pattern" - transparency (Appendix pg. 117)
"Why Serve Meals At School" - handout (Appendix pg. 118)
"Balance Your Health" - handout (Appendix pg. 119)
"Lunch Menu Contest" - form (Appendix pg. 120)

CONTENT:

- The school monthly menu is planned by school Food Service Director. Each individual meal must meet the requirements set by the Federal Government. These regulations state that for every elementary school lunch served, the following must be included (at least):
  - 1 pint fresh milk
  - 1 slice of bread (or equivalent)
  - 1 tsp. of butter (margarine)
  - 3/4 cup fruit/vegetable (at least 2 varieties provided daily)
  - 2 oz. protein-rich food (meat, poultry, fish, eggs, cheese, dried beans, peanut butter)
  - in addition, one raw food and one food high in vitamin C must be served each day.
  - a food high in vitamin A must be served at least twice per week.
- Type "A" Lunch Pattern transparency of a lunch menu not only focuses on the five parts of the lunch, but also on the food group to which each category belongs and the major nutrients it supplies. It would make a colorful bulletin board, especially if pictures of food were added to each category.

CONTENT: (continued)

. The Type "A" Lunch Pattern is done in 3 steps as follows:

Step I: Review the Four Food Groups:

1. Meat Group (fish, poultry, meat, dried beans or peas, and peanut butter)
2. Milk Group (milk, yogurt, custard)
3. Fruits/Vegetable Group (spinach, apples, oranges, green beans, carrots)
4. Bread/Cereal Group (bread, roll, bun)

Step II: Fill in the pattern with different suggestions for a lunch menu.

Step III: Review the Six Major Nutrients

1. Protein (growth/development)
2. Carbohydrates (energy)
3. Fats (energy, warmth, protection)
4. Vitamins (regulation of body processes)
5. Minerals (regulation of body processes)
6. Water (control of body temperature, transportation of nutrients)

ACTIVITY

MOTIVATION: Ask participants to write down the five components of the Type "A" school lunch and review them briefly.

INVOLVEMENT: . Show slide/tape show. Hand out "School Lunch Menu" - one per person. Discuss how they relate.
. Go over "Type "A" Lunch Pattern" discussing the importance of it to them as well as to the children.

CLOSURE: Pass out "Why Serve Meals At School" and "Balance Your Health" - handouts.

EVALUATION: Have participants plan a Type "A" lunch menu for one day on "Lunch Menu Contest" forms.

REVIEW OF NINE POPULAR FAD DIETS

6

INTRODUCTION

This parent/community program deals with a quick review of the nine popular fad diets: Atkins', Stillman's, Pralinn's, Macrobiotic diet, HCG diet, Pritikins', Rubin's, Crenshaw's, and Jolliffe's. This review of basic nutrition principles will make it apparent that "fad" diets are undesirable and often are dangerous.

OBJECTIVES: After participating in this session, you will be able to:

1. To illustrate the dangers to your health through fad diets.
2. To identify the side effects of the nine popular fad diets.
3. To introduce healthful methods of weight control.

MATERIALS: "Nine Claims To "Quick" Weight Loss" or "Nutritional Nonsenses" - handout (Appendix pg. 121)
"Four Food Groups" - handout (Appendix pg. 122)

CONTENT:

A. Everyone is on a "diet." Individual eating patterns are our "diets." This meeting will focus upon reducing and weight loss diets, especially those considered to be unhealthful and ineffective.

B. A quick review of basic nutrition principles will make it apparent that "fad" diets are undesirable and often are dangerous. (Distribute the "Four Food Groups" handout and use the enlarged version to illustrate the discussion.)

1) Foods can be divided into four main food groups: the Meat Group; the Milk Group; the Fruit/Vegetable Group; and the Grain Group.

a) There is one additional food group which contains the foods which are high in calories and relatively low in nutrients. This group is called the "extra" group.

- foods found in the "extra" group include fats, oils, cream cheese, sour cream, candy, alcohol, and soda pop.
- although fats, oils, butter and margarine are considered "extra", the body does require a small amount each day; usually the needed fat is easily obtained from the meat group or non-skim milk products found in the milk group.

2) Foods within each group contain the same type of major nutrients (i.e., foods in the meat group are all good sources of protein; grain group foods are all high in carbohydrates; fruits and vegetables provide vitamins and minerals; milk products are good sources of calcium and protein; and "extra" group foods supply mostly calories).

CONTENT: (continued)

3) In order to obtain all of the nutrients the body needs for growth, energy, and health, it is necessary to eat a variety of foods from the Four Food Groups. There is no one food which contains everything to support life.

C. It is well known that it is important to maintain a proper weight.

1) Statistics reveal that at least four out of five Americans over 18 years of age are at least ten pounds overweight.

2) The hazards of obesity include:

a) An increased risk of diabetes.
b) An increased chance of high blood pressure.
c) An increased occurrence of diseases of the heart, blood vessels, liver and kidney.

3) Being overweight places additional stress on the body to work harder.

a) One estimate stated that for every extra pound of fat there is an equivalence of three miles of capillaries which cause the heart to work harder (capillaries are the tiny blood vessels through which nourishment travels directly to the tissues).

D. Losing weight requires patience. Since the weight was gained over a period of time, it will take time to lose.

1) The only way to achieve your desired weight is to adjust your calorie intake and energy output.

a) To maintain weight, calories consumed must equal the energy expended.
b) To lose weight, calories need to be adjusted so that there is more energy expended (i.e., decrease the amount of calories consumed and/or burn up more calories by increasing the amount of physical activity).

2) One pound of body fat is equivalent to approximately 3,500 calories. To lose one pound of fat in one week, it would be necessary to decrease the daily intake by only 500 calories, or to increase the energy expenditure by this much, or to use a combination of fewer calories and greater activity.

a) Losing 1 - 2 pounds per week is considered to be the safest and most effective way to lose weight.
b) When weight loss is faster than 1 - 2 pounds per week, usually water is being lost and not the fat. This explains why most people quickly regain the pounds they lose on "quick weight loss" diets.

CONTENT: (continued)

3) When choosing the recommended minimum number of servings for adults from each food group, only about 1200 calories are consumed.

a) Two servings (1 cup each) of whole milk are equal to about 320 calories.
b) Two servings (about 2 ounces each) from the meat group are equal to approximately 400 calories.
c) Four servings from the fruit/vegetable group (e.g., 1 orange, ½ cup spinach, ½ banana, and ½ cup carrots) provide about 160 calories.
d) Four servings from the grain group (e.g., 1 slice of bread, ½ cup cereal, 1 tortilla, and 1 roll) supply about 280 calories.
e) This totals 1,160 calories.
f) Additional calories are usually obtained from the "extra" group (e.g., buttering toast, cooking in oil, etc.).

4) Choosing a balanced diet from the Four Food Groups provides the foundation for healthful eating and is the best method of weight control.

E. There are no "quick" or "magic" diets that will melt away those unwanted pounds.

1) There is a new fad diet advertised in the various media just about every month. Many of them are merely new names for diets which were popular several years ago.

ACTIVITY

MOTIVATION: Ask participants if any of them have been on a "fad" diet. If so, what were the results and would they do it again. And why?

INVOLVEMENT:
- Distribute "Nine Claims to "Quick" Weight Loss" or "Nutritional Nonsenses" - handout. Review this information with the group. Solicit questions and opinions.
- A healthful, balanced diet chosen from the four main food groups is the basic foundation for good health and the best method of weight control. By adjusting caloric intake and energy expenditure, gradual and permanent weight loss will occur.

CLOSURE: Pass out "Four Food Groups" handout.

EVALUATION: Have participants plan a nutritionally balanced meal using the Four Food Groups; would they eat this meal?

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APPENDIX

Swing Into Nutrition

PARENTS/COMMUNITY

You Are Especially Invited
To Learn About

"Low Cost - High Protein Foods"

Workshop Agenda

DATE: Designated Date

TIME: Designated Time

PLACE: San Mateo City School District Office
Board Room

TOPIC: How you can have high protein cooking with lower cost through protein value of meats and meat substitutes.

PRESENTED BY: Deborah Barley
Nutrition Education Director
San Mateo City School District

Please Come Share Your Ideas,
Suggestions and Advise

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PARENT WORKSHOP SURVEY

INSTRUCTIONS: Put a check in the column best describing how you feel.

QUESTIONS	5 STRONGLY AGREE	4 SOMEWHAT AGREE	3 NEUTRAL	2 SOMEWHAT DISAGREE	1 STRONGLY DISAGREE
1. The workshop helped me understand how important nutrition is.					
2. I learned how important my food choices are to my family.					
3. I enjoyed particpating in the workshop activities.					
4. I am interested in attending another workshop.					
5. Overall, I found the workshop to be interesting.					

6. Comments: _____

_____

_____

_____

_____

HOW TO PUT THAT NEWSLETTER TOGETHER

In putting an attractive eye-catching parent/community newsletter together as the one on the next six pages (two-sided copies) involves just using basic step-by-step techniques. These steps include:

NOTE: Some pictures and examples may need to be reduced before using.

1. A decorative border. (pp. 32 - 41 examples to choose from)
2. Title Heading. (example: Swing Into Nutrition - pg. 42)
3. Month and Year. (examples: pp. 43 - 44)
4. Content of the Newsletter. (up to the producer of the newsletter)
5. Pictures to break up the lettering. (examples: pp. 45 - 48)
6. Back of the newsletter can have recipes, games, or more pictures.
7. Reproduce on colored paper. If you use the "About Information" to make a parent/community newsletter, you should have an attractive, eye-catching newsletter.

Swing Into Nutrition

HOLIDAY GREETINGS FROM YOUR
NUTRITION EDUCATION STAFF!!

At last the holidays have arrived. This time of the year brings much cheer, fun, and laughter among us. The holiday treats at this time give us a great opportunity for experiencing new foods. But look out! Holiday treats can also bring on toothaches. Last year alone, America ate a total of 3 1/2 billion pounds of candy. The average of this was 16.7 pounds per man, woman, and child in America. The cost of this candy was nearly 3 billion dollars. These figures show that we should be concerned about our sugar intake. But, we all know that holiday time is a hard time to do this. Since we have supplied ourselves with sugar, it will take time to break our "sugar habit." Ways to start are------

Ease yourself and your family into less sugary holiday treats. Save these treats until right after the meal. Then encourage a good tooth brushing as soon as possible to prevent dental caries.

Offer a variety of fresh fruits for desserts. Along with the fresh fruits you can also offer a variety of cheeses, yogurt, seeds, or nuts.

But the most important thing to remember is that old habits are hard to break. Progress of less sweets can be slow and trying, but success can follow with effort and creating imaginative, sugarless holiday treats.

On the back, we have dessert recipes that do not contain sugar that can be used as holiday treats.

Happy sugarless cooking. Hope you and your family enjoy these nutritious and delicious desserts.

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Below are two recipes that are sugar free for the holidays. The first one is from the Contra Costa Dental Society Women's Auxiliary. The other one is from the SNAC Project. If you have any questions, please feel free to contact the Nutrition Education staff.

BANANA-DATE NUT COOKIES (Sugar Free!)

3 bananas
1/2 cup chopped walnuts
2 cups rolled oats
1 tsp. vanilla
1/3 cup oil
1 cup chopped dates
1/2 tsp. salt

1. Mash bananas, leaving some pieces.
2. Add chopped dates and oil.
3. Beat with a fork.
4. Add remaining ingredients and mix lightly.
5. Let stand for few minutes for oatmeal to absorb moisture.
6. Drop from spoon on ungreased cookie sheet.
7. Bake in 350 degree oven 25 minutes or until nicely browned. They burn easily, so watch carefully.

FRUIT KABOBS

String varieties of cheeses, fresh, canned, and/or dried fruits on metal or wooden skewers, plain or colored toothpicks (round), or pretzel sticks and serve as a snack. The fruits or cheeses are not cooked after skewering. Choose at least two kinds of fruits and cheeses, presenting a pleasing contrast in color and flavor. Select fruits that are not soft and messy. Cut large fruits and cheeses into bite-size chunks. Dip the cut surfaces of light colored fresh fruits in pineapple or citrus juice to prevent darkening. Use such fruits as these for kabobs: unpeeled apple or orange wedges, halves of fresh apricots or small plums, dried apricots, figs or prunes, banana, canned peaches or pineapple chunks, cherries, dates, grapes, melon cubes, kumquats, large seeded raisins, or whole strawberries. The varieties of cheeses can be Swiss, Monterey Jack, plain or smoked cheddar, and emmenthal.

Call your school Nutritionist, Deborah Barley, with any questions about your family's nutrition--347-9111, ext.255.

Swing Into Nutrition

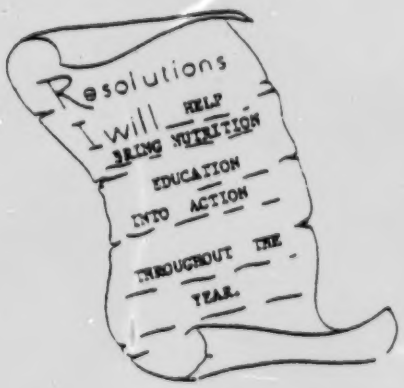
NUTRITION IN ACTION!

JANUARY 1980

This is the fourth year for this special State and federally-funded research project in the San Mateo City School District. The goals of this project are (1) to improve and develop healthful food habits by children; (2) to integrate students' awareness of nutrition in their classroom activities and school food service program.

In the San Mateo City School District there are approximately 650 students in 17 classrooms involved in this special program. The nutrition education activities emphasize the 5 following concepts daily: (1) awareness and feelings about food and their food habits, (2) nutrient content of food and new foods, (3) process of body growth and development, (4) awareness of different foods through their social and cultural background, (5) food handling, preparation, and safety.

This program needs strong parent involvement. Parents can help this program by becoming more nutrition conscious with their families. Here's how you can be involved:



1. Read the nutrition newsletter Swing Into Nutrition!
2. Attend Nutrition Education Parent meetings held at school.
3. Assist your child's teacher with the special nutrition related activities (tasting parties, cooking projects, field trips, etc.).
4. Reinforce classroom activities by using materials your child brings home. Send letters supporting this program, about your feelings of what nutrition education has done for your family, to your child's teacher or your school nutritionist, Deborah Barley.

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5. Read the labels of the foods you select to be sure of their nutritional content for your family.

6. Call or write your school nutritionist, Deborah Barley, 347-9111 Ext. 253, for more program details or any questions you might have.

NUTRITION EDUCATION STARTS AT HOME WITH YOU!

Calcium In Milk Is Needed By You!

The body's need for calcium occurs throughout life, but especially during childhood, pregnancy and lactation. It is the mineral that is frequently found to be low in our diets. The major function of calcium is to build and maintain bones and teeth. Calcium also helps in the process of bloodclotting, in normal nerve transmission and regulation of the heartbeat.

As adults, we do need calcium and the food products in the Milk Group. For the average male or female adult between the ages of 19 - 51+, you need 800 milligrams of calcium each day. That is about 22 ounces of milk (whole, low, or non-fat milk). Twenty-two ounces of milk is about 2-3/4 cups of milk, or about five ounces of cheddar or Swiss cheese. Other food sources are cottage cheese, dark green leafy vegetables, sardines, clams, and oysters.

Women need to remember that during pregnancy or lactation they need to increase their calcium from 800 milligrams to 1,200 milligrams. Therefore, instead of 22 ounces of milk, they need 33 ounces of milk or about four 8 ounce glasses of milk.

When you, as an adult, do not consume this amount, you may develop osteoporosis. Osteoporosis is a metabolic disorder which may be defined as a reduction in the amount of bone without any changes in its chemical composition.

Can you find these foods high in calcium?

Cheese
Custard
Ice Cream
Buttermilk
Yogurt
Milk
Leafy Greens

I	T	P	R	O	S	A	W
C	H	E	E	S	E	X	B
E	A	S	T	R	S	O	U
C	T	Y	O	G	U	R	T
R	T	X	M	R	C	Y	T
E	E	V	A	E	A	Z	E
A	N	T	B	E	N	Q	R
M	I	L	K	N	D	U	M
Q	P	Z	V	S	E	P	I
C	U	S	T	A	R	D	L
R	A	N	W	O	D	V	K

Osteoporosis occurs in persons after age fifty and especially in women after the menopause.

Low levels of calcium in the blood may increase the irritability of nerve fibers and nerve centers which results in muscle spasms such as leg cramps. So, as you can see, it is just as important for adults to have calcium in their diet as it is for children.

Swing Into Nutrition

SAVE YOUR HEART FOR ME -
BE MY VALENTINE!

Do you enjoy eating..... Does your day's eating pattern look something like this.....

For breakfast a sweet roll or donut with coffee, cream and sugar. Lunch: cheeseburger with lots of french fries and ketchup and a milkshake. For dinner a thick New York steak with a baked potato filled with lots of butter, chives and sour cream, gravy, buttered carrots, cheesecake.

Does this sound familiar.....

Eating is one of life's greatest pleasures, but Americans tend to consume too many fatty foods in their diets. Fats are necessary, but too much in the body can cause problems such as in atherosclerosis. About 50% of the calories of the average American's diet is contributed by fat. The American Heart Association suggests that this be lowered to about 30 - 35%.

How can you do this.....

You should reduce your use of animal fat such as butter, meats, and egg yolks. Instead, use more plant fat such as margarine, cooking oils made of safflower, soybean, corn or cottenseed oil. Also, it is recommended that the average intake of cholesterol be no higher than 300 mg. For example, an average egg has 250 mg. of cholesterol, so limit consumption of eggs to 3 a week. Read labels for nutritional content whenever available. They list cholesterol contents of the food.

If you would like more information about the content of fats and cholesterol in foods, call your school nutritionist, Deborah Barley, at 347-9111, ext. 255.

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The American Heart Association also has many excellent educational resources available. Their address is:

American Heart Association of San Mateo County
1848 El Camino Real
Burlingame, CA 94010
342-5522

They also have a cookbook out called The American Heart Association Cookbook for about $12.95, which can be purchased at most bookstores or found at your local library.

Here are two fun low cholesterol recipes. One is from The American Heart Association Cookbook. The other one is from the Nutrition Education Project.

George Washington Salad

½ cup chopped celery
½ cup Swiss or Jack cheese, cubed
½ cup canned cherries, drained
½ cup grapefruit
plain yogurt

Chop and measure celery and cheese and put in bowl. Add cherries and grapefruit. Stir gently to mix all colors. Spoon onto 4 small plates. Top each salad with spoonful of yogurt and a cherry.

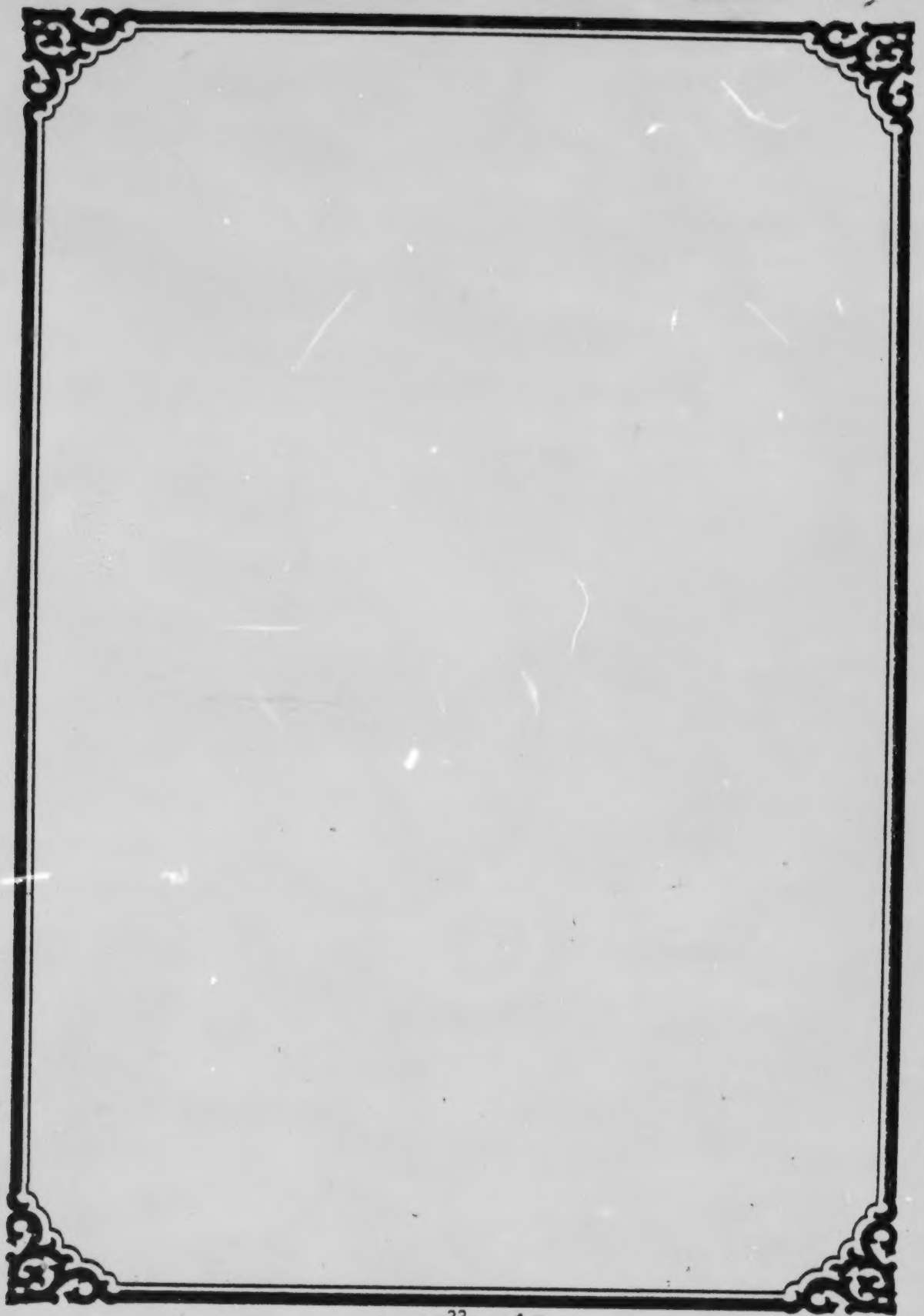
Crispy Baked Chicken

Cornflake crumbs give this skinless chicken a crisp new coating.

1 frying chicken (2½ to 3 pounds), cut into serving pieces
1 cup cornflake crumbs
1 cup skim milk
Seasoning, if desired

Preheat oven to 400°F. Remove all skin from the chicken, rinse and dry the pieces thoroughly. Season. Coat each piece with oil or dip in milk, shake to remove excess, and roll in the crumbs. Let stand briefly so coating will adhere. Place chicken in an oiled baking pan. (Line pan with foil for easy clean-up.) Do not crowd; pieces should not touch. Bake 45 minutes or more. Crumbs will form a crisp "skin."

Yield: 4 servings. Approx. cal/serv.: 270



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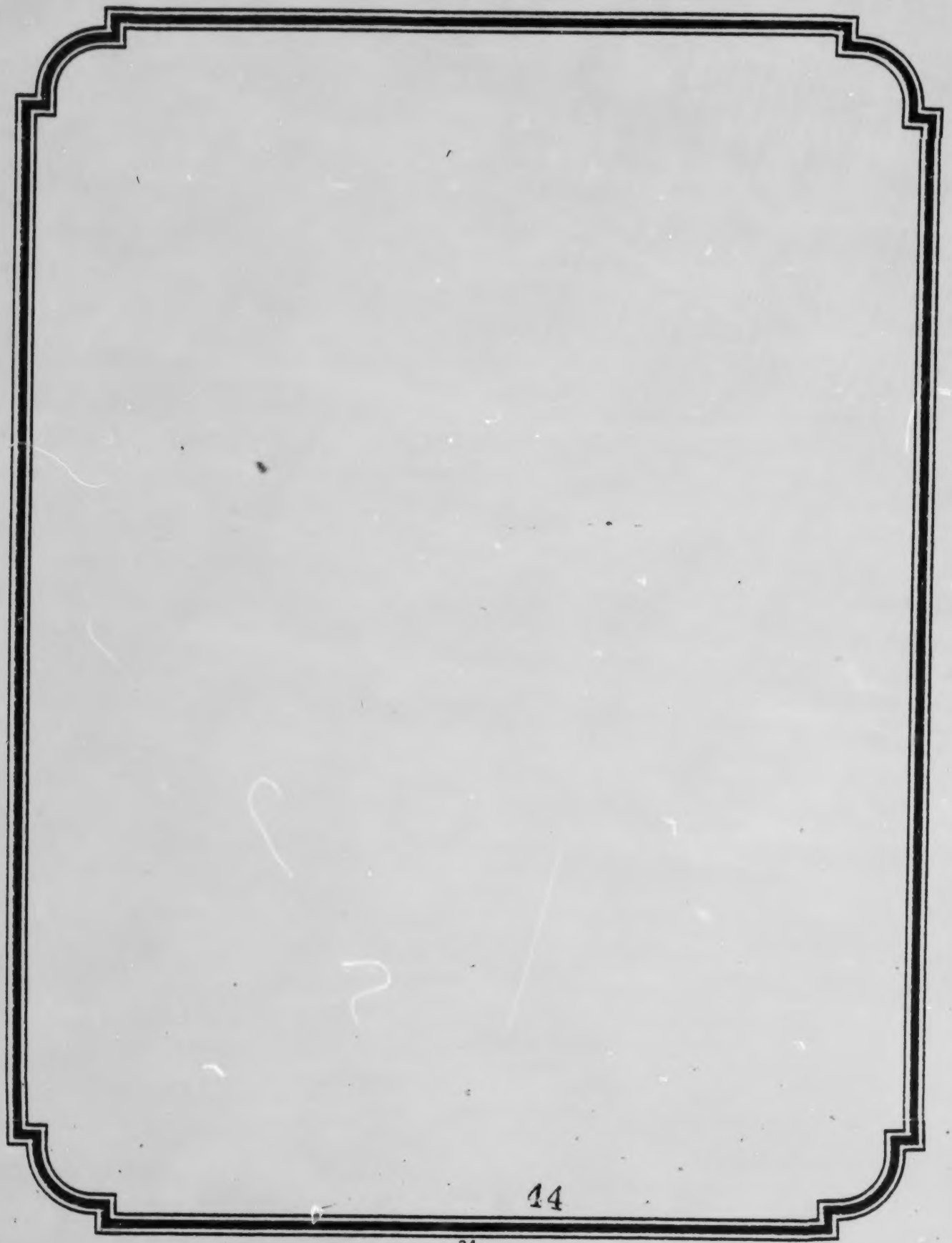

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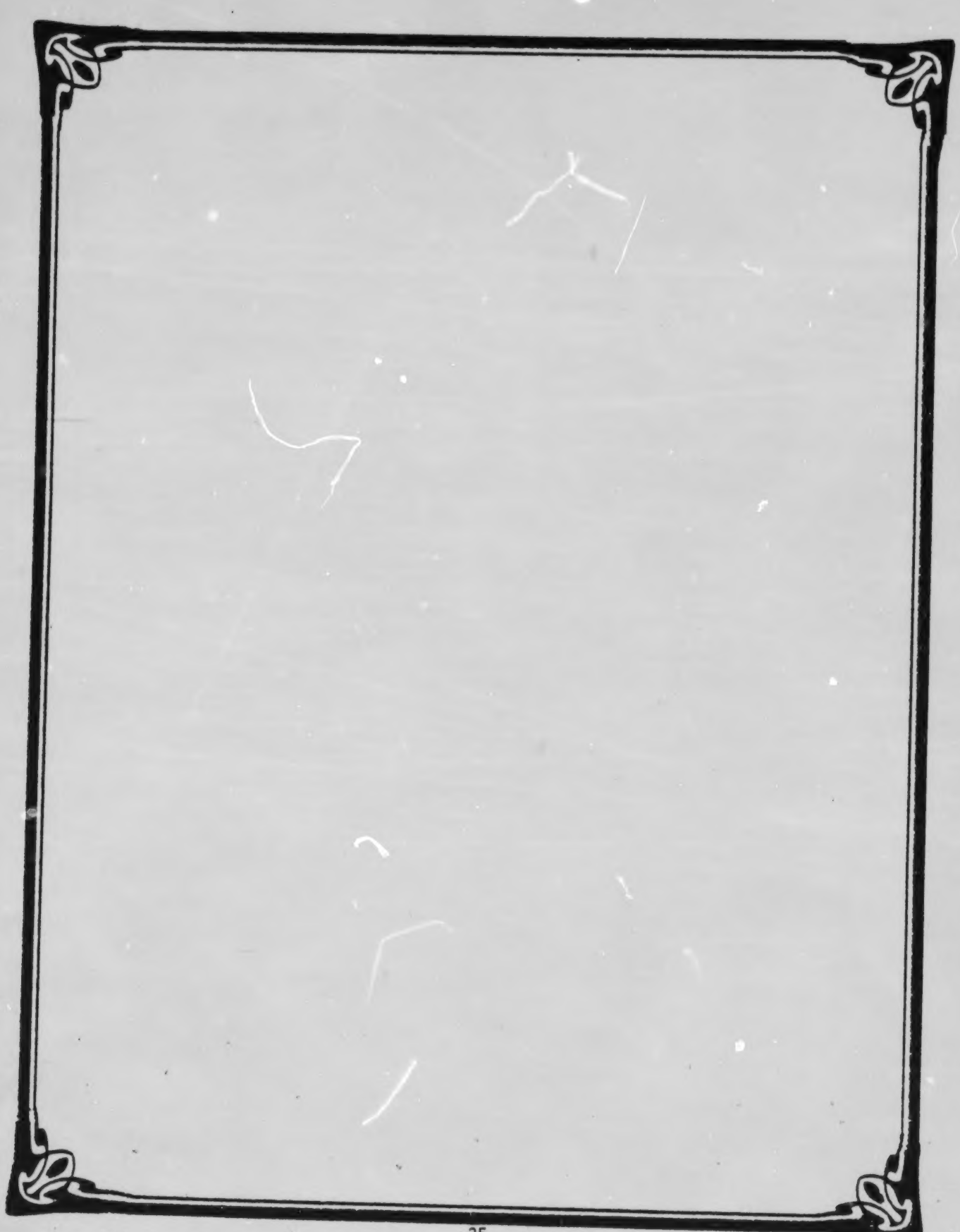

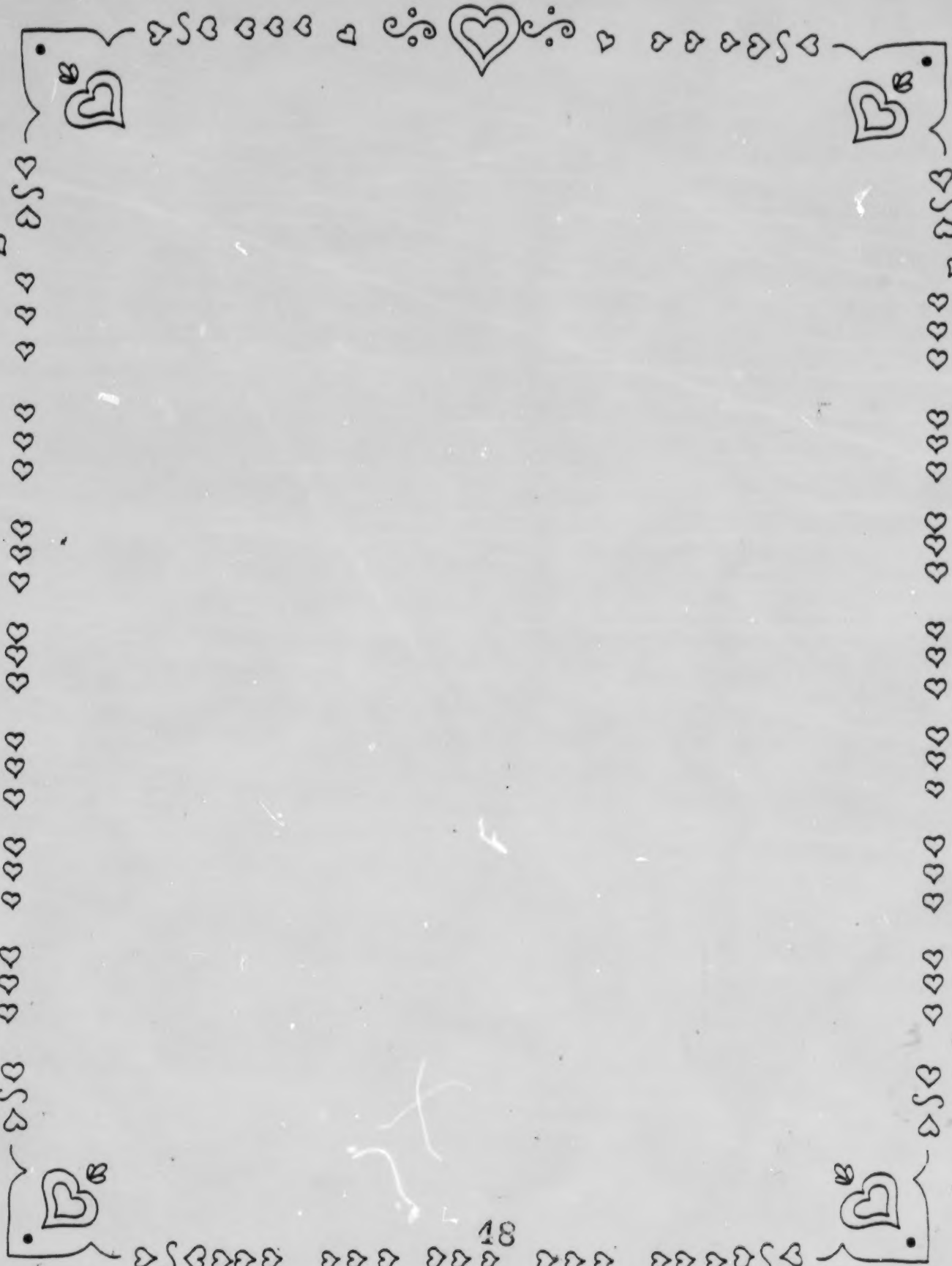

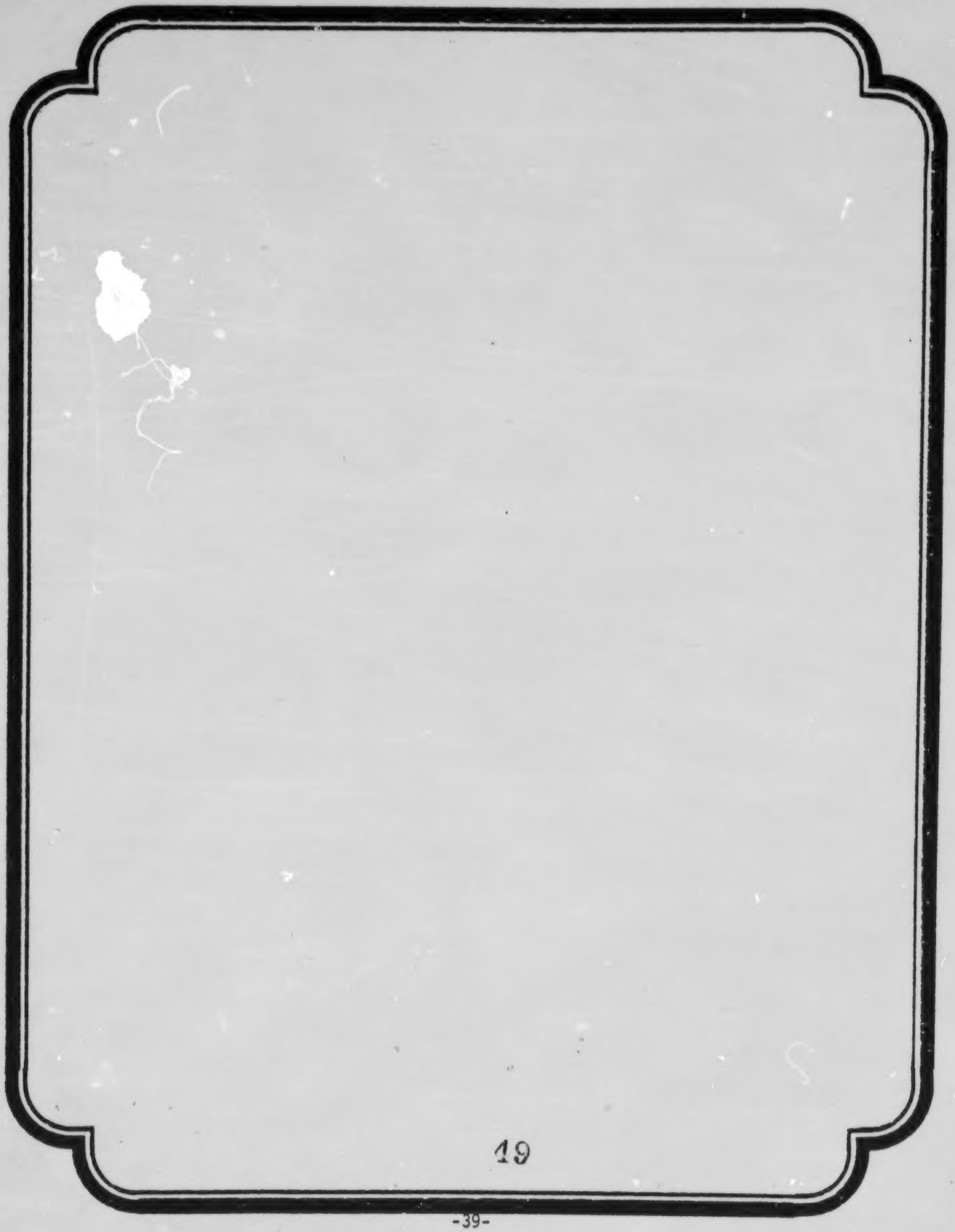

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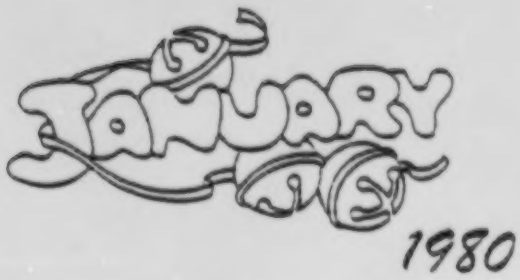
Swing Into Nutrition



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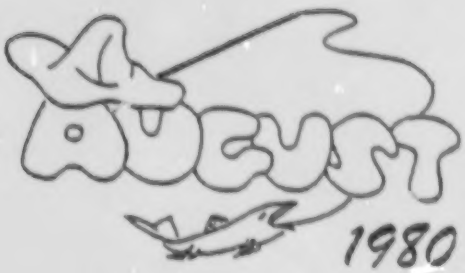

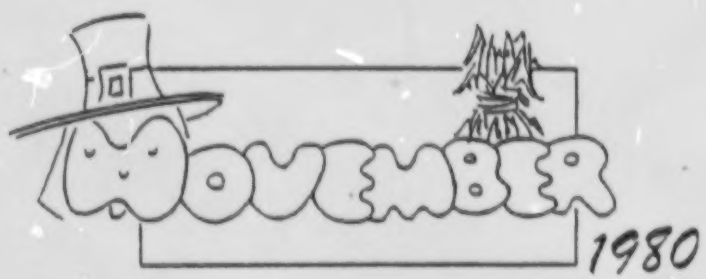

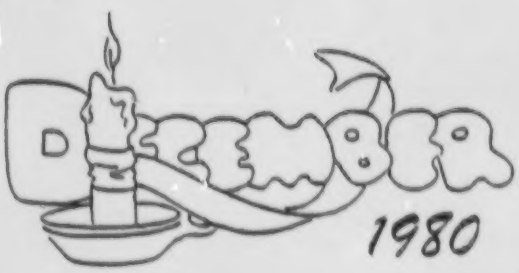

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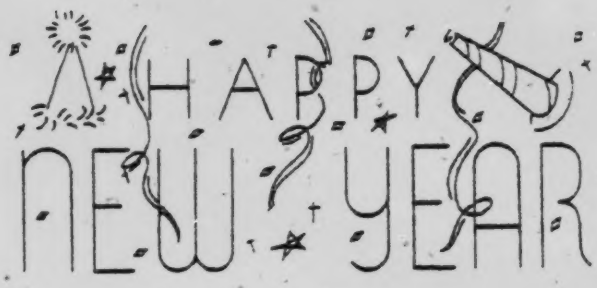

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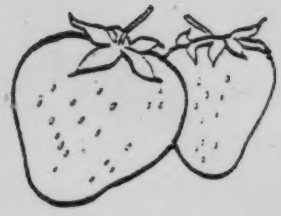

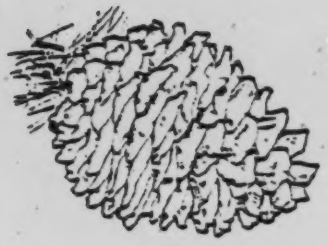

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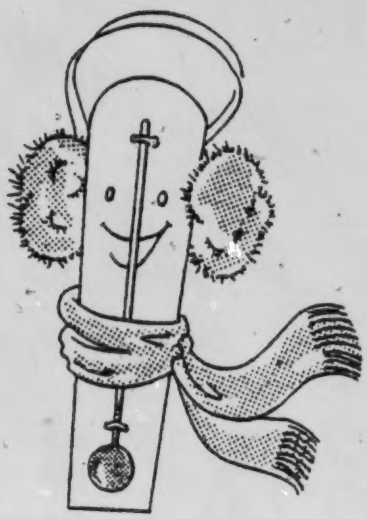

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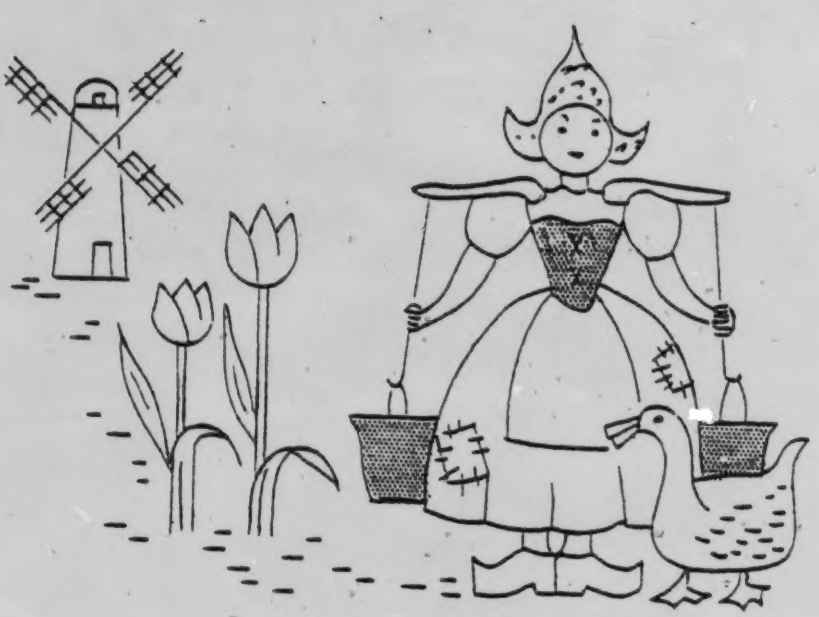

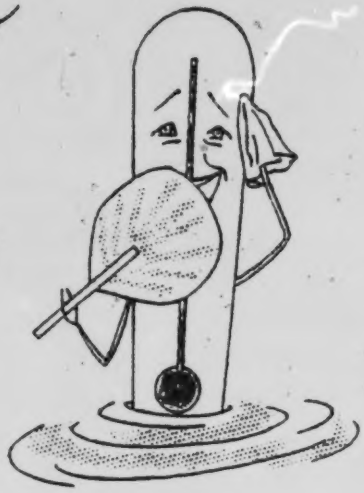

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1980 Revised Recommended Dietary Allowances

The following tables have been approved by the National Academy of Sciences for distribution. They included tables on (a) Recommended energy intakes, together with mean heights and weights; (b) the Recommended Dietary Allowances for protein, fat-soluble vitamins, water-soluble vitamins, and minerals; and (c) estimates of adequate and safe intakes of selected vitamins, trace elements, and electrolytes.

The full report will not be published before 1980. If you wish to use these tables in a publication, this may be done by including the following statement: "Reproduced from: Recommended Dietary Allowances, Ninth Revised Edition (1980, in press), with the permission of the National Academy of Sciences, Washington, D.C." No further permission is required.

For further information, write or call: Myrtle L. Brown, PH.D., Executive Secretary, Food and Nutrition Board, 2101 Constitution Avenue, Washington, D.C. 20418; 202—389-6366.

Mean heights and weights and recommended energy intake*

age and sex group	weight		height		energy		
	kg.	lb.	cm.	in.	needs		range in kcal
					MJ	kcal	
infants							
0.0-0.5 yr.	6	13	60	24	kg. × 0.48	kg. × 115	95- 145
0.5-1.0 yr.	9	20	71	28	kg. × 0.44	kg. × 105	80- 135
children							
1-3 yr.	13	29	90	35	5.5	1,300	900-1,800
4-6 yr.	20	44	112	44	7.1	1,700	1,300-2,300
7-10 yr.	28	62	132	52	10.1	2,400	1,650-3,300
males							
11-14 yr.	45	99	157	62	11.3	2,700	2,000-3,700
15-18 yr.	66	145	176	69	11.8	2,800	2,100-3,900
19-22 yr.	70	154	177	70	12.2	2,900	2,500-3,300
23-50 yr.	70	154	178	70	11.3	2,700	2,300-3,100
51-75 yr.	70	154	178	70	10.1	2,400	2,000-2,800
76+ yr.	70	154	178	70	8.6	2,050	1,650-2,450
females							
11-14 yr.	46	101	157	62	9.2	2,200	1,500-3,000
15-18 yr.	55	120	163	64	8.8	2,100	1,200-3,000
19-22 yr.	55	120	163	64	8.8	2,100	1,700-2,500
23-50 yr.	55	120	163	64	8.4	2,000	1,600-2,400
51-75 yr.	55	120	163	64	7.6	1,800	1,400-2,200
76+ yr.	55	120	163	64	6.7	1,600	1,200-2,000
pregnancy						+300	
lactation						+500	

*From Recommended Dietary Allowances, Revised 1980, Food and Nutrition Board, National Academy of Sciences—National Research Council, Washington, D.C. The data in this table have been assembled from the observed median heights and weights of children, together with desirable weights for adults for mean heights of men (70 in.) and women (64 in.) between the ages of eighteen and thirty-four years as surveyed in the U.S. population (DHEW/NCHS data).

Energy allowances for the young adults are for men and women doing light work. The allowances for the two older age groups represent mean energy needs over these age spans, allowing for a 2 per cent decrease in basal (resting) metabolic rate per decade and a reduction in activity of 200 kcal per day for men and women between fifty-one and seventy-five years; 500 kcal for men over seventy-five years; and 400 kcal for women over seventy-five (see text). The customary range of daily energy output is shown for adults in the range column and is based on a variation in energy needs of ± 400 kcal at any one age (see text and Garrow, 1978), emphasizing the wide range of energy intakes appropriate for any group of people.

Energy allowances for children through age eighteen are based on median energy intakes of children of these ages followed in longitudinal growth studies. Ranges are the 10th and 90th percentiles of energy intake, to indicate range of energy consumption among children of these ages (see text).

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Recommended Dietary Allowances, Revised 1989*

Designed for the maintenance of good nutrition of practically all healthy people in the U.S.A.

Food and Nutrition Board, National Academy of Sciences-National Research Council

age and sex group	weight kg	weight lb	height cm	height in	protein	fat-soluble vitamins: vitamin A	vitamin D	vitamin E	water-soluble vitamins: vitamin C	thiamin	riboflavin	niacin	vitamin B_6	folacin	vitamin B_{12}	minerals: calcium	phosphorus	magnesium	iron	zinc	iodine
					g	μg RE†	μg‡	mg α-TE#	← mg →			mg NE§	mg	← μg →		← mg →					μg
infants																					
0.0-0.5 yr.	6	13	60	24	kg × 2.2	420	10	3	35	0.3	0.4	6	0.3	30	0.5**	360	240	50	10	1	40
0.5-1.0 yr.	9	20	71	28	kg × 2.0	400	10	4	35	0.5	0.6	8	0.6	45	1.5	540	360	70	15	5	50
children																					
1-3 yr.	13	29	90	35	23	400	10	5	45	0.7	0.8	9	0.9	100	2.0	800	800	150	15	10	70
4-6 yr.	20	44	112	44	30	500	10	6	45	0.9	1.0	11	1.3	200	2.5	800	800	200	10	10	90
7-10 yr.	28	62	132	52	34	700	10	7	45	1.2	1.4	16	1.6	300	3.0	800	800	250	10	10	120
males																					
11-14 yr.	45	99	157	62	45	1,000	10	8	50	1.4	1.6	18	1.8	400	3.0	1,200	1,200	350	10	15	150
15-18 yr.	66	145	176	69	56	1,000	10	10	60	1.4	1.7	18	2.0	400	3.0	1,200	1,200	400	10	15	150
19-22 yr.	70	154	177	70	56	1,000	7.5	10	60	1.5	1.7	19	2.2	400	3.0	800	800	350	10	15	150
23-50 yr.	70	154	178	70	56	1,000	5	10	60	1.4	1.6	18	2.2	400	3.0	800	800	350	10	15	150
51+ yr.	70	154	178	70	56	1,000	5	10	60	1.2	1.4	16	2.2	400	3.0	800	800	350	10	15	150
females																					
11-14 yr.	46	101	157	62	46	800	10	8	50	1.1	1.3	15	1.8	400	3.0	1,200	1,200	300	10	15	150
15-18 yr.	55	120	163	64	46	800	10	8	60	1.1	1.3	14	2.0	400	3.0	1,200	1,200	300	10	15	150
19-22 yr.	55	120	163	64	44	800	7.5	8	60	1.1	1.3	14	2.0	400	3.0	800	800	300	10	15	150
23-50 yr.	55	120	163	64	44	800	5	8	60	1.0	1.2	13	2.0	400	3.0	800	800	300	10	15	150
51+ yr.	55	120	163	64	44	800	5	8	60	1.0	1.2	13	2.0	400	3.0	800	800	300	10	15	150
pregnancy					+ 30	+ 200	+ 5	+ 2	+ 20	+ 0.4	+ 0.3	+ 2	+ 0.6	+ 400	+ 1.0	+ 400	+ 400	+ 150	††	+ 5	+ 25
lactation					+ 20	+ 400	+ 5	+ 3	+ 40	+ 0.5	+ 0.5	+ 5	+ 0.5	+ 100	+ 1.0	+ 400	+ 400	+ 150	††	+ 10	+ 50

* The allowances are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined. See text for detailed discussion of allowances and of nutrients not tabulated. See preceding table for weights and heights by individual years of age and for suggested average energy intakes.

† Retinol equivalents; 1 retinol equivalent = 1 μg. retinol or 6 μg. β-carotene. See text for calculation of vitamin activity of diets as retinol equivalents.

‡ As cholecalciferol: 10 μg. cholecalciferol = 400 I.U. vitamin D.

α-tocopherol equivalents: 1 mg. d-α-tocopherol = 1 I.U. See text for variation in allowances and calculation of vitamin E activity of the diet as α-tocopherol equivalents.

§ 1 N.E. (niacin equivalent) = 1 mg. niacin or 60 mg. dietary tryptophan.

‖ The folacin allowances refer to dietary sources as determined by *Lactobacillus casei* assay after treatment with enzymes ("conjugases") to make polyglutamyl forms of the vitamin available to the test organism.

** The RDA for vitamin B_{12} in infants is based on average concentration of the vitamin in human milk. The allowances after weaning are based on energy intake (as recommended by the American Academy of Pediatrics) and consideration of other factors, such as intestinal absorption; see text.

†† The increased requirement during pregnancy cannot be met by the iron content of habitual American diets or by the existing iron stores of many women; therefore, the use of 30 to 60 mg. supplemental iron is recommended. Iron needs during lactation are not substantially different from those of non-pregnant women, but continued supplementation of the mother for two to three months after parturition is advisable in order to replenish stores depleted by pregnancy.

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Journal of The American Dietetic Association

Estimated safe and adequate daily dietary intakes of additional selected vitamins and minerals*

age group	vitamins			trace elements†						electrolytes		
	vitamin K	biotin	pantothenic acid	copper	manganese	fluoride	chromium	selenium	molybdenum	sodium	potassium	chloride
	← µg. →			← mg. →								
infants												
0.0-0.5 yr.	12	35	2	0.5-0.7	0.5-0.7	0.1-0.5	0.01-0.04	0.01-0.04	0.03-0.06	115- 350	350- 925	275- 700
0.5-1.0 yr.	10- 20	50	3	0.7-1.0	0.7-1.0	0.2-1.0	0.02-0.06	0.02-0.06	0.04-0.08	250- 750	425-1,275	400-1,200
children and adolescents												
1-3 yr.	15- 30	65	3	1.0-1.5	1.0-1.5	0.5-1.5	0.02-0.08	0.02-0.08	0.05-0.1	325- 975	550-1,650	500-1,500
4-6 yr.	20- 40	85	3-4	1.5-2.0	1.5-2.0	1.0-2.5	0.03-0.12	0.03-0.12	0.06-0.15	450-1,350	775-2,325	700-2,100
7-10 yr.	30- 60	120	4-5	2.0-2.5	2.0-3.0	1.5-2.5	0.05-0.2	0.05-0.2	0.1 -0.3	600-1,800	1,000-3,000	925-2,775
11 + yr.	50-100	100-200	4-7	2.0-3.0	2.5-5.0	1.5-2.5	0.05-0.2	0.05-0.2	0.15-0.5	900-2,700	1,525-4,575	1,400-4,200
adults	70-140	100-200	4-7	2.0-3.0	2.5-5.0	1.5-4.0	0.05-0.2	0.05-0.2	0.15-0.5	1,100-3,300	1,875-5,625	1,700-5,100

*From Recommended Dietary Allowances, Revised 1980. Food and Nutrition Board, National Academy of Sciences—National Research Council. Because there is less information on which to base allowances, these figures are not given in the main table of the RDAs and are provided here in the form of ranges of recommended intakes.

†Since the toxic levels for many trace elements may be only several times usual intakes, the upper levels for the trace elements given in this table should not be habitually exceeded.

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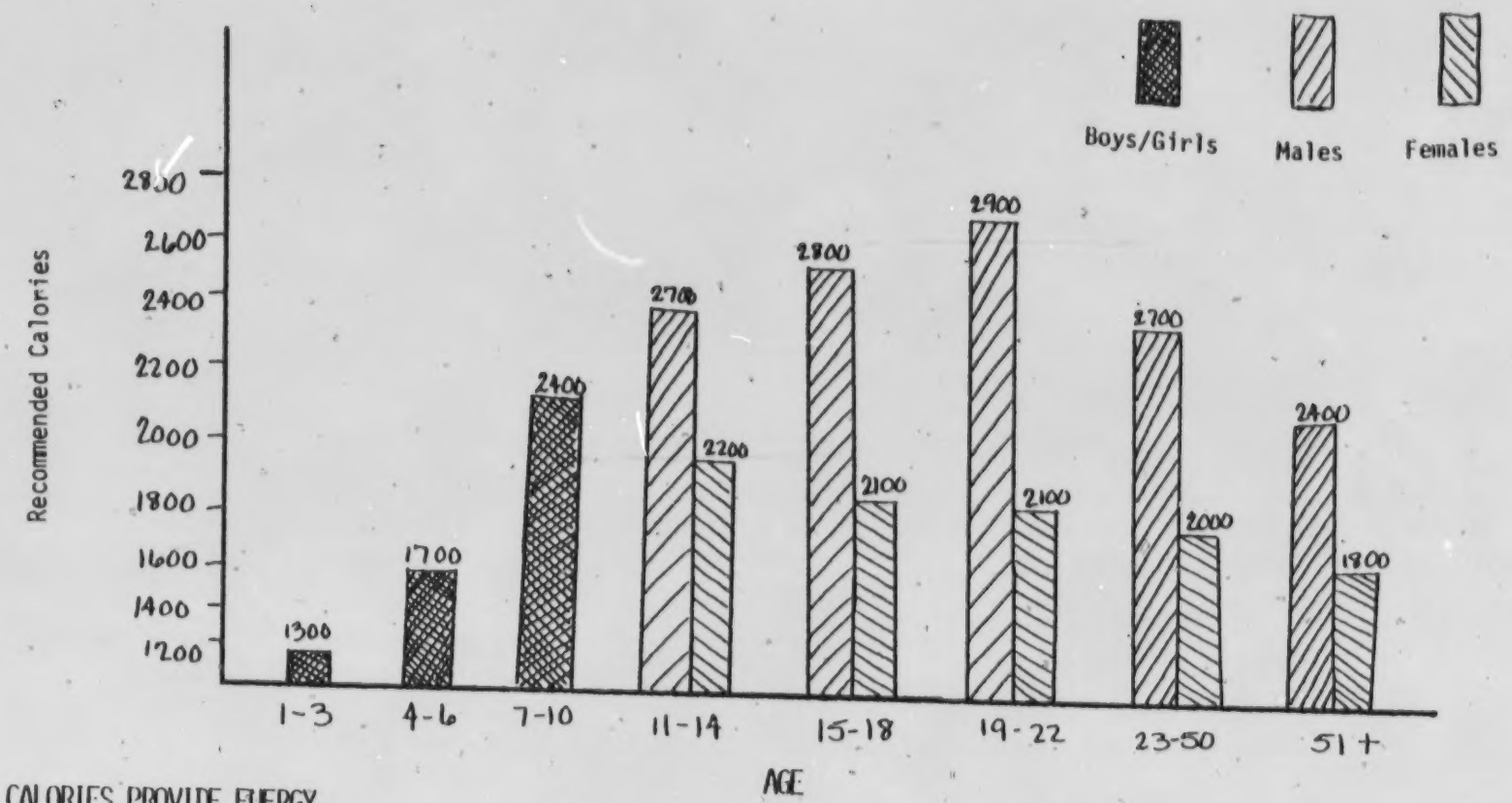
RECOMMENDED CALORIE INTAKE BY AGE AND SEX (1980 R.D.A.)



CALORIES PROVIDE ENERGY

1 gram Protein provides 4 calories.

1 gram Carbohydrate provides 4 calories.

1 gram of Fat provides 9 calories.

1 grame of alcohol provides approximately 7 calories

ENERGY NEEDS of an individual are dependent upon age, sex, body size, and activity level.

Infants up to 6 months: 117 calories per kilogram (2.2 lbs)
Infants over 6 months: 108 calories per kilogram
Pregnancy: add 300 calories
Lactation: add 500 calories

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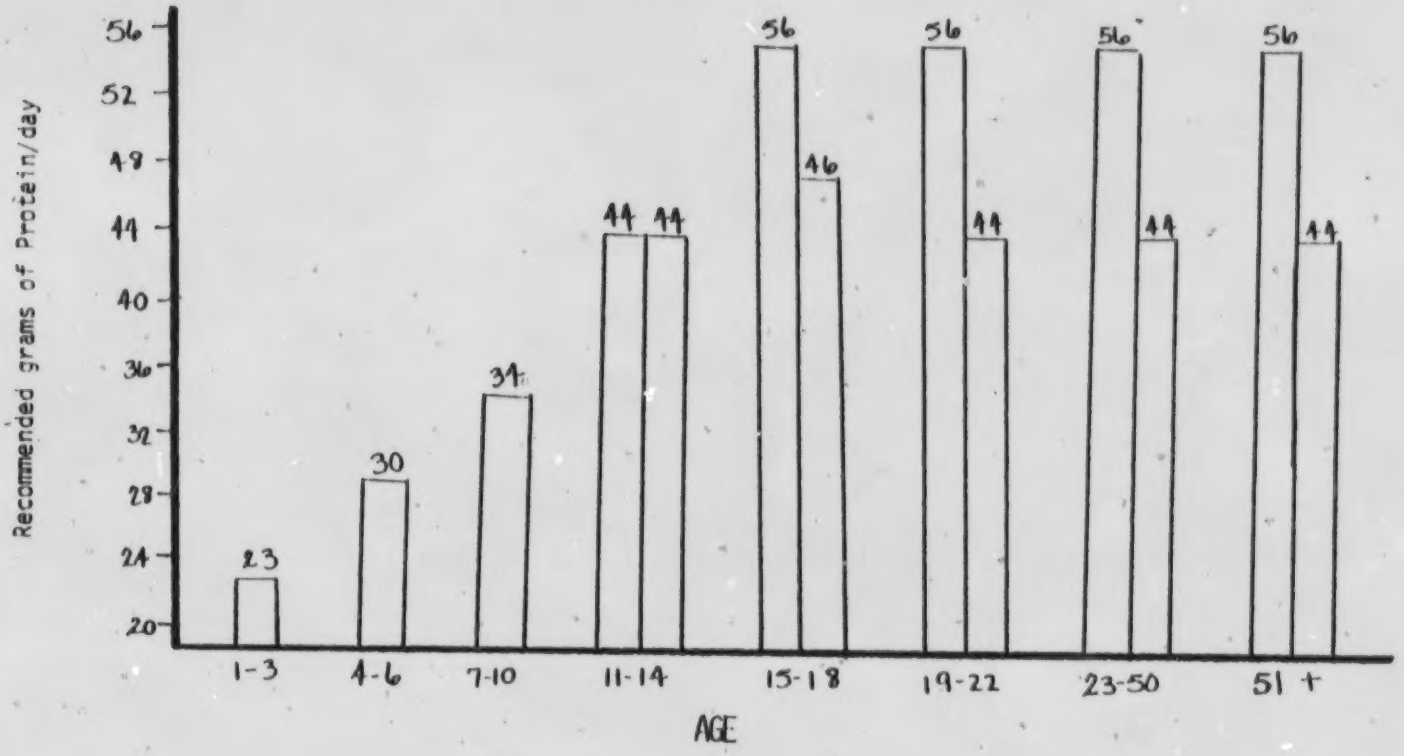
RECOMMENDED PROTEIN INTAKE (1980 R.D.A.)



PROTEIN requirements are highest during periods of growth, birth through adolescence.

Infant		
1 - 3 years	2 - 2.2	grams per Kg
4 - 6 years	1.8	grams/Kg
7 - 10 years	1.5	grams/Kg
11 - 14 years	1.2	grams/Kg
15 - 18 years	1.0	grams/Kg
10 - 22 years	.9	grams/Kg
23 - 50 years	.8	grams/Kg
51+ years	.8	grams/Kg

Pregnancy: add 30 grams protein/day
Lactation: add 20 grams protein/day

CHOOSING A RELIABLE NUTRITION BOOK OR ARTICLE

CHOOSING A RELIABLE NUTRITION BOOK IS DIFFICULT BECAUSE ANYONE CAN WRITE ABOUT NUTRITION AND HEALTH.

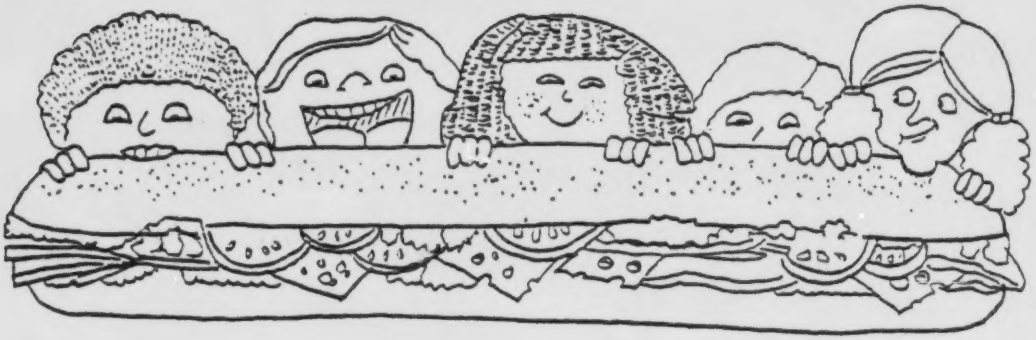
A RESOURCE IS RECOMMENDED IF....

1. The author is trained in nutrition at a recognized college or university
2. The book is on an approved list put out by a group made of college-trained dietitians/nutritionists.
3. The author uses reliable books and journals as resources.
4. The references cited are recent.

A RESOURCE IS NOT RECOMMENDED IF....

1. It tries to sell or promote a product.
2. It is full of vague medical terms and unsupported promises.
3. The claims made by the author are not reasonable or justifiable.

NOTE: To be sure a book is reliable, ask a local nutritionist or check with a university or community college.



NUTRITION

RESOURCE

HANDBOOK

WHERE TO GET ANSWERS TO NUTRITION QUESTIONS

IN SAN MATEO COUNTY

NUTRITION INFORMATION RESOURCES

The Nutrition Project has prepared this list of available nutrition resources in the San Mateo area. As you can see, there are many places to go for nutrition information.

Choosing a Reliable Book

Choosing a reliable nutrition book is difficult because so many people write about nutrition and health-related areas. The following guidelines help in choosing a reliable book.

1. Is the author trained in nutrition at a recognized university or college?
2. Is the book on the acceptable list put out by a nutrition group made up of professionally trained dietitians?
3. Does the author acknowledge the advice of recognized nutritionists?
4. Does the author use reliable books and journals for resources?
5. Are the references cited recent?

Finally, check with a local nutritionist or with a college nutrition department.

Books and Articles Are Not Recommended IF:

They try to sell or promote a product.

The article is full of vague medical terms and deceptive and unsupported promises.

The claims made by the author are not reasonable or justifiable.

RECOMMENDED MAGAZINES AND ARTICLES

These publications carry reliable nutrition articles and are enjoyable reading.

Family Health Magazine (formerly Today's Health)

Weight Watchers Magazine

"Slim Gourmet" in the San Mateo Times

Family Circle Magazine -- most articles are reliable.

Women's Day Magazine " " " "

NUTRITION BOOKS FOR THE FAMILY

Nutrition Project Lending Library*--Recommended Books

*To borrow these, Call Carvill Veech, R.D., at 347-9111, Ext. 255.

FAMILY GUIDE TO BETTER FOOD AND BETTER HEALTH, by Ronald Deutsch
Meredith Corporation, 1971, $1.95

This book explains basic nutrition principles and their application to everyday living in a readable common-sense form. Every family should have a copy. It is a classic. Available at most bookstores in paperback for $1.95 from Bantam Books.

REALITIES OF NUTRITION, by Ronald Deutsch
Bull Publishing Co., Palo Alto, 1976, $9.95 Hard cover

Something for everyone and fun to read as well as informative. Available in hard cover with easy-to-read print. A good basic nutrition book that you will enjoy.

THE DIETER'S COMPANION, by Nikki and David Goldbeck
New American Library, New York, 1975. Paperback $1.95

The Dieter's Companion dissects some of the better known weight-loss diets, pointing out their characteristics, their claimed advantages, and their nutritional pitfalls. These include Weight Watchers, Low-Carbohydrate, Crash diets, and Liquid Diets. Describes diets that don't concern weight-loss such as Natural Foods, Vegetarianism, Yoga Foods, and Macrobiotics. It includes a Table of Food Content, a review of basic nutrition, and a guide to self-evaluation of your diet. Some references are questionable, but the overall content of the book is sound.

LAUREL'S KITCHEN, A HANDBOOK OF VEGETARIAN COOKERY AND NUTRITION, by Laurel Robertson
Nilgiri Press, Berkeley, 1976, $13.95 Hard Cover

Any one interested in a meatless diet that is nutritionally sound or even just a few meatless meals will find this book a blessing. As a handbook of recipes and information it is clear, sensible, interesting, and well organized, based on up-to-date authoritative research. It is written for people with no training in nutrition or the health sciences -- people who simply want a basic reference manual of vegetarian eating for home use.

DIET FOR A SMALL PLANET: HIGH PROTEIN MEATLESS COOKERY, by Frances Moore Lappé
Ballantine Books, New York, 1975, $1.95 Paperback

This book is about protein -- how to choose meatless foods with the protein quality of meat -- and how to save $$ at the same time. A companion volume, Recipes for a Small Planet, expands on the meatless diet principle.

KIDS ARE NATURAL COOKS -- CHILD-TESTED RECIPES FOR HOME AND SCHOOL USING NATURAL FOODS,
Parents Nursery School, Inc. 1974, Paperback spiral, approximately $4.50.

This book is full of nutrition fun for school and home. Suggestions for fall, winter, spring, and summer are timely. No white sugar is used in the recipes. These recipes can be used with children as young as nursery school, but will delight older children and adults, as well.

WHERE TO FIND NUTRITION SERVICES

To insure factual answers to your questions on nutrition, contact these agencies and individuals in the San Mateo area. If the person cannot answer your questions, he or she will guide you to the best possible source.

NUTRITION EDUCATION AND CONSUMER ADVICE

San Mateo City School District	Deborah Barley Carvill Veech	415-347-9111 x 255 415-347-9111 x 237
Department of Public Health	Sally Brothers	415-573-2344
U.C. - Cooperative Extension Service	Ms. Thepus	415-881-6341
P.G. & E.	Ms. Duggan	408-298-3333 x 266
Dairy Council of California	Ms. Yeperman	415-464-0490

DIET COUNSELING

Hospital Outpatient Department Mills Hospital	Dietitian	415-579-2629
Sequoia Hospital	Dietitian	415-369-5811 x 501
Menlo Medical Clinic	Dietitian	415-323-8161

HEART DISEASE INFORMATION

Heart Association	Ms. Snyder	415-692-0981

DIABETES INFORMATION

San Mateo Diabetes Association		415-574-0371
Mills Hospital	Ann Schaiman	415-579-2619

FEDERAL NUTRITION PROGRAM (Women, Infants, Children) "WIC"

Charles Drew Medical & Dental	Ms. Hughes	415-328-5060 x 240

NUTRITION CLASSES

College of San Mateo	Nutritionist	415-574-6161
Skyline College	Nutritionist	415-355-7000
Canada College	Sally McGill	415-364-1212 x 282

U.S.FOOD AND DRUG ADMINISTRATION (FDA)

San Francisco		415-556-2062

OFFICE OF CONSUMER AFFAIRS & WEIGHTS & MEASURES 415-557-0966

TELEMED TAPE LIBRARY

Tel-Med Tape Library is a Mills Hospital public service. Recorded health messages 3-7 minutes long are designed to help you remain healthy, help you recognize signs of illness, and learn about topics of interest to you.

The following tapes are on nutrition-related topics. To hear the tapes, call Tel-Med at 347-7711 Monday - Friday, 10 a.m. - 7 p.m.; Saturdays 10 a.m. - 4 p.m. (closed) Sundays/Holidays. Tell the operator the number of the tape you wish to hear. If you wish to hear the same tape again, or another tape, call back again and the operator will play it again.

TAPE #	TOPIC
11	Diabetes
34	Anemia
233	Diabetes in Children
303	Dental Plaque
565	Hypoglycemia
600	Cholesterol in Your Diet
601	Low Salt Diets
602	Why Are Trace Minerals Important in Your Diet?
609	Answers to Questions Often Asked About Diabetic Diets

PHYSICAL SIGNS OF GOOD AND BAD HEALTH

PHYSICAL SIGNS OF GOOD HEALTH AND PROPER DIET

Normal Weight

Normal Height for age

Good Posture

Healthy Skin

Bright Eyes

Alert Disposition

Healthy Teeth

PHYSICAL SIGNS OF POOR HEALTH

(possibly related to poor diet)

Small for age (height/weight)

Obese

Poor Posture

Susceptible to Infections and Diarrhea

Decayed Teeth

Tired, listless

EMOTIONAL HEALTH AND POOR NUTRITION

Hungry people have difficulty concentrating.

Nutrient deficiency may affect feelings, response, and reactions. The specific nutrient deficiency will determine.

Normal Growth and Behavior Patterns of School Children That Affect Their Food Habits

Age 3 - 5

Growth — general body growth slowed.
Increased development of senses influences food likes and dislikes.
Handles food himself — likes finger foods.
Likes to experiment with texture, new foods, choices.
Food jags common — parents and child care centers serving foods should accept without obvious concern.
Likes colorful food.
Food temperature — lukewarm preferred.
Many spills — large muscles more developed than smaller ones.
Prefers bite size food.
Prefers small servings.
Needs between meal snacks.
Enjoys surprises in names of food.
Soft drinks and concentrated sweets may cut intake of essential nutrients.

Age 5 - 7

Growth — approximately two inches in height and from three to eight pounds in weight.
Wobbly baby teeth — texture of food important.
Biting difficulties — should not serve whole apples, thick celery or carrot sticks, etc.
Teacher's example extremely important.
Hard to sit still so may fidget at table.
Likes finger foods.
Colds, "childhood diseases", stomach aches due to worry about school are common.

Age 8 - 10

Growth — slow and steady — one to two and one-half inches in height, four to ten pounds in weight.
Big eaters slow down and vice versa.
Fewer illness.
New teeth emerging — dental care needed.
Likes desserts and sweets.
More interested in tasting new things and appetite usually good.
Improved table manners.

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Socially a "joiner" — Cub Scouts, Brownies, special projects.
In a hurry and dislikes taking time for meals.
Breakfast often skipped.

Age 11 - 13

Growth — two to three and one-half inches in height and six to thirteen pounds in weight.
Wide range of development physically — others not.
Girls more mature than boys.
Great curiosity about all that is happening including cafeteria activities — best helpers.
Ready to try new foods or same food prepared in a new way.
Enjoy suggesting names for dishes on school menus.
Appetites steady and less tempermental likes and dislikes than latter.
Enjoy doing things together, civic projects, health clubs, pollution control, etc.
Reading is at a peak — bulletin boards exhibits, posters.
Interested in science — how the body uses food.
Want to know "why" and "how" of nutrition and will work well with cafeteria director and/or manager.
Like to plan and carry out projects.
School feeding programs and nutrition education can be closely tied together.

Age 13 - 17 Adolescents

Period of rapid growth with accelerated muscular, skeletal, endocrine and emotional development.
Growing need to express independence and assert authority expressed in dress, conduct and tendency to follow bizarre, unbalanced diets.
Need to belong and greatly influenced by peer group.
Great activity with clubs, sports, parties, homework.
Large appetities, "hollow leg", need for large amounts of food — more than adults.
Girls concerned about figure, complexion and appearance; desire to be thin leads to meal skipping.
Fad diets the "in-thing".
Boys interested in physical fitness; complexion problems.
Snacking frequently — favorites: ice cream, hamburgers, "fries", pastries, candy, pizza, soft drinks, etc.

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I'ma Gonna.....

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"WHAT DO YOU THINK"?

1. What does R.D.A. stand for? _____

2. What is more common in the U.S., over nutrition or undernutrition? _____

3. True or False: All people need the same amount of protein per pound of body weight?

4. True or False: Children instinctively select adequate diets if given complete freedom to choose their foods? _____

5. What is one resource person or place available to you who/that can provide reliable nutrition information? _____

6. What are the names of the basic four food groups? _____

   _____

   _____

   _____

7. Did you learn anything today that you did not know before? _____

8. On a scale of 1 to 5, how interested were you in today's topic?

1	2	3	4	5
not interested				very interested

9. How useful is the information for you?

1	2	3	4	5
not at all				extremely useful

10. How would you rate the leader's presentation?

1	2	3	4	5
poor				excellent

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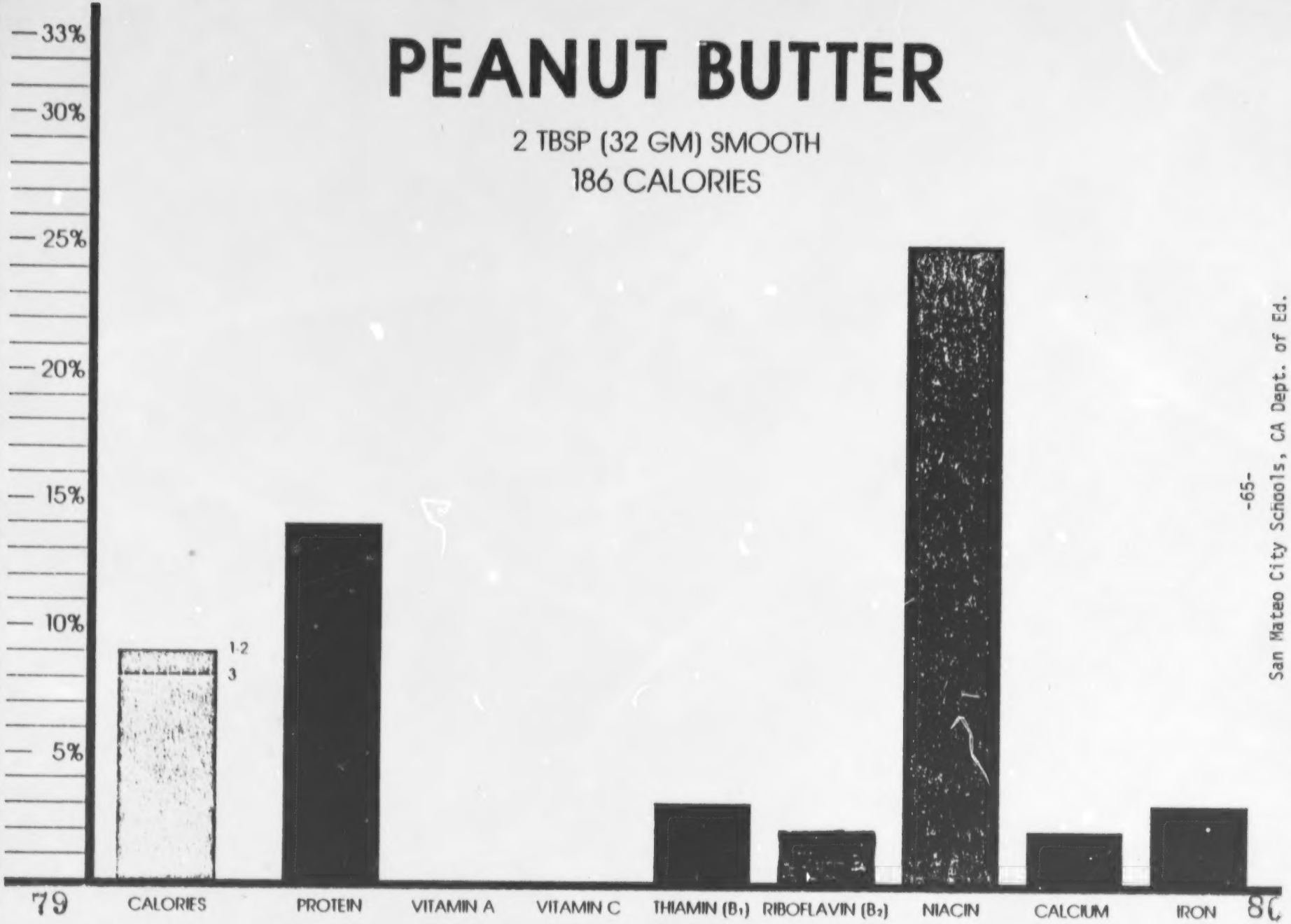
PEANUT BUTTER

2 TBSP (32 GM) SMOOTH
186 CALORIES



1 – woman, 23-50
2 – girl, 15-18
3 – girl, 11-14

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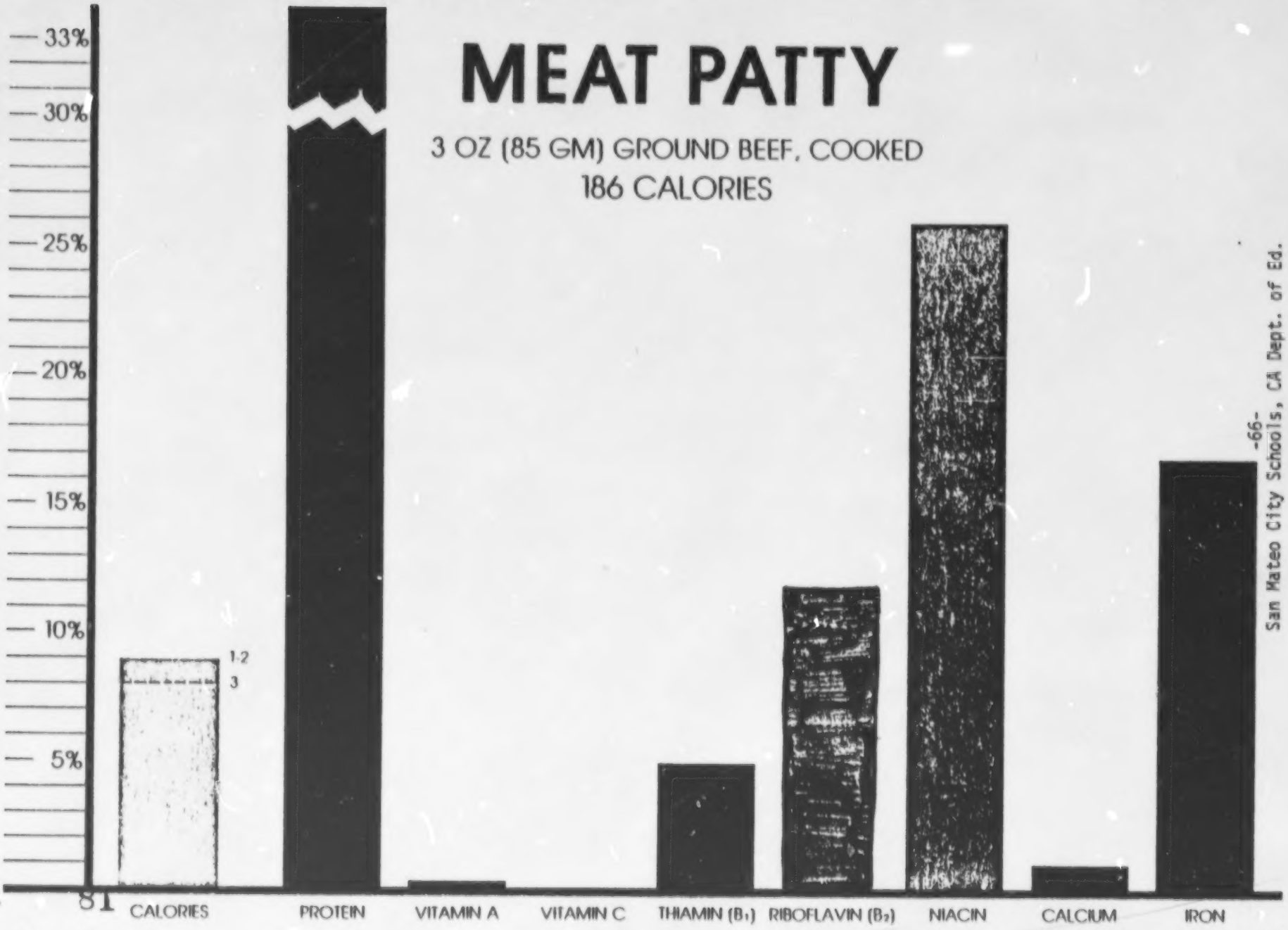

MEAT PATTY

3 OZ (85 GM) GROUND BEEF, COOKED
186 CALORIES

1 – woman, 23-50
2 – girl, 15-18
3 – girl, 11-14

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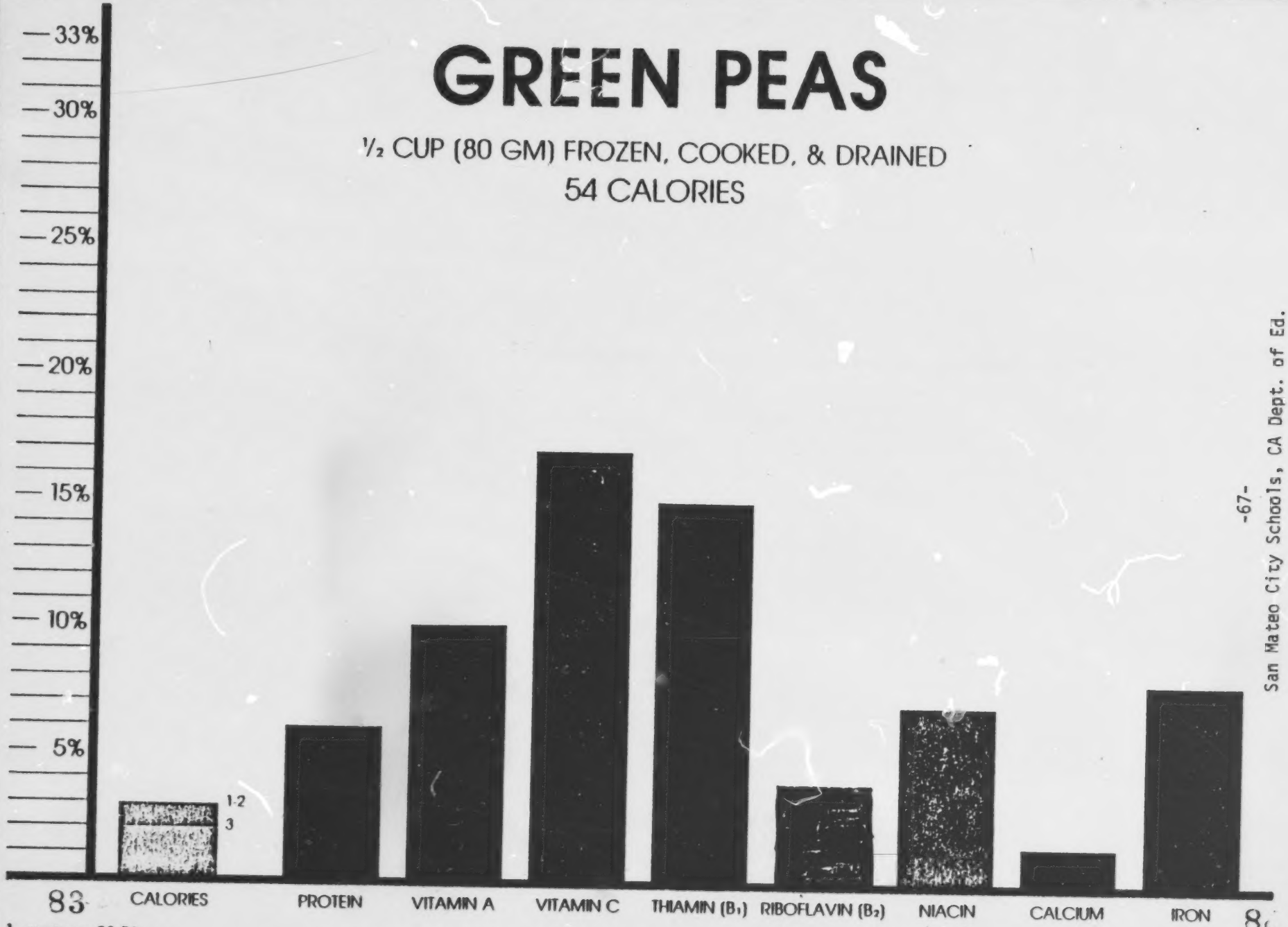
GREEN PEAS

½ CUP (80 GM) FROZEN, COOKED, & DRAINED
54 CALORIES



83 8

1 – woman, 23-50
2 – girl, 15-18
3 – girl, 11-14

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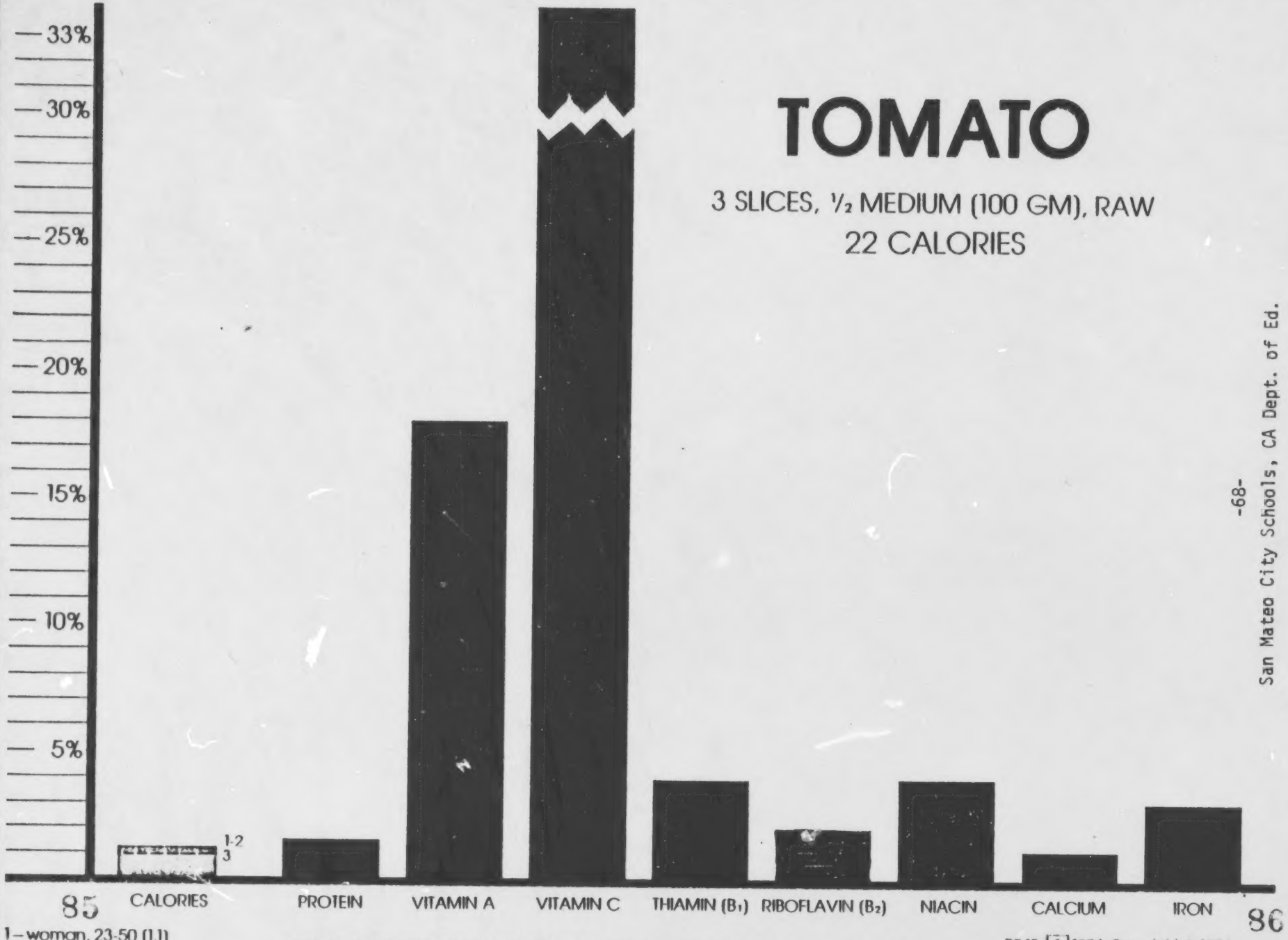

TOMATO

3 SLICES, ½ MEDIUM (100 GM), RAW
22 CALORIES

1 – woman, 23-50 (1.1)
2 – girl, 15-18 (1.1)
3 – girl, 11-14 (0.9)

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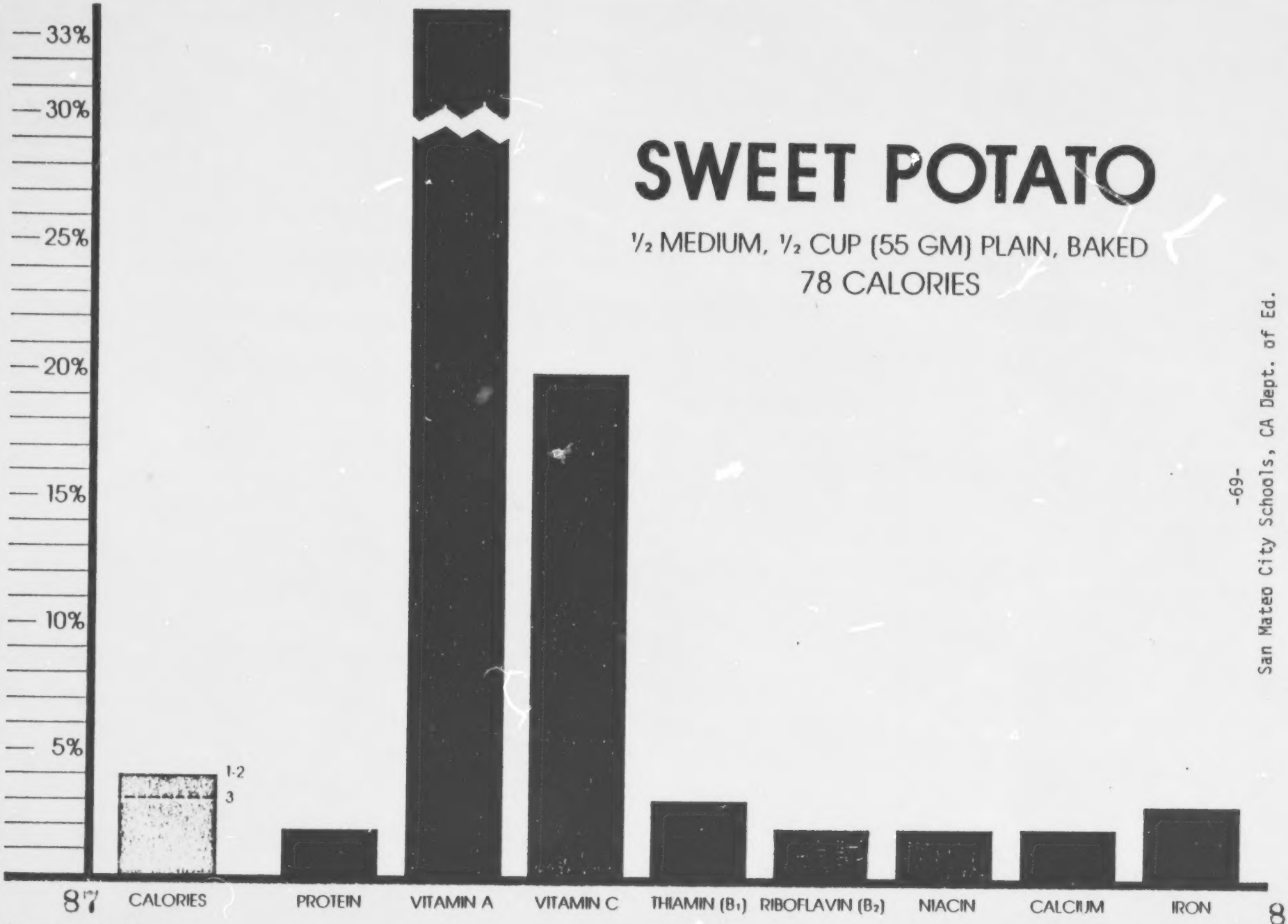

SWEET POTATO

½ MEDIUM, ½ CUP (55 GM) PLAIN, BAKED
78 CALORIES

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87 80

1 – woman, 23-50
2 – girl, 15-18
3 – girl, 11-14

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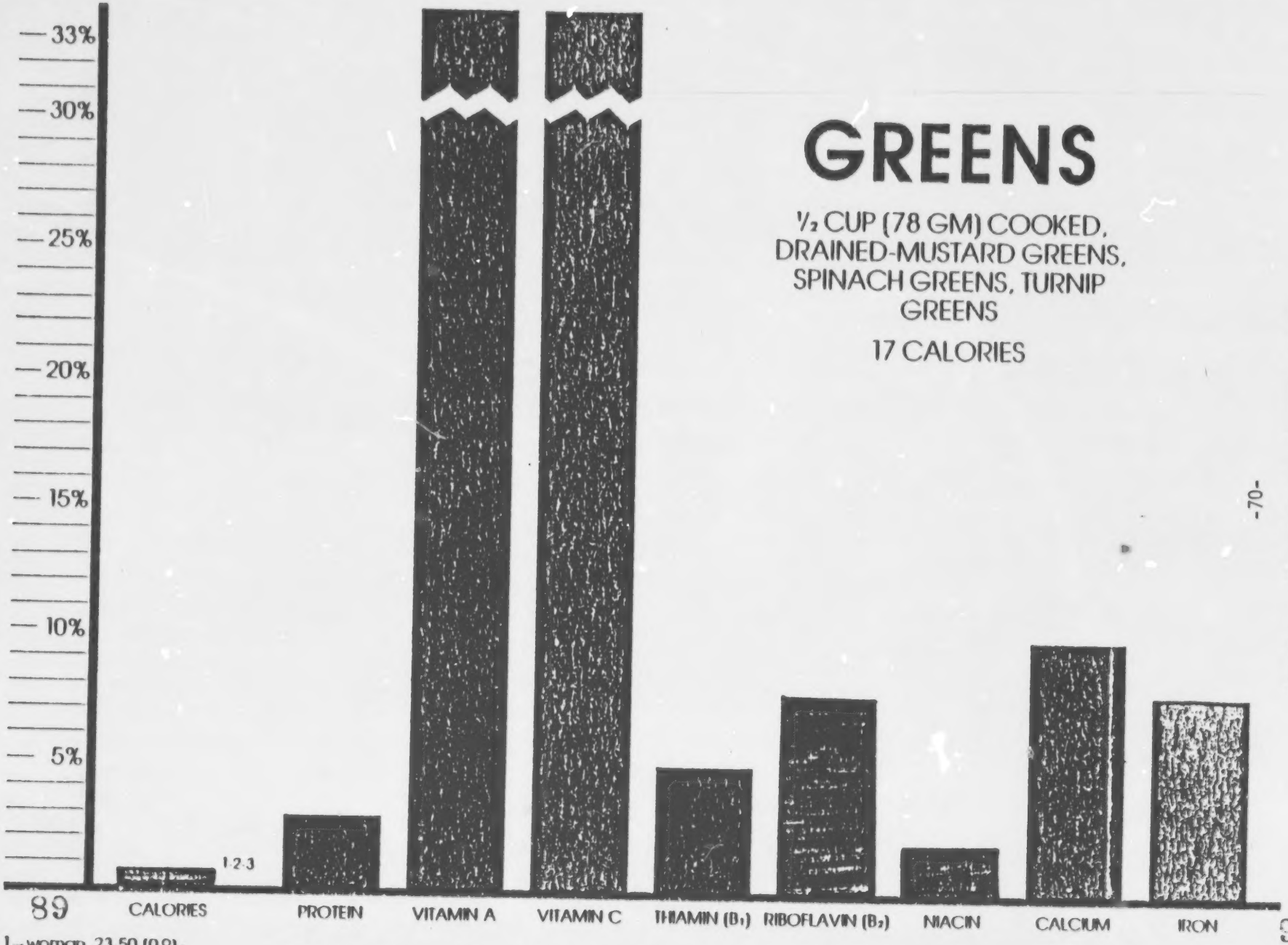

GREENS

½ CUP (78 GM) COOKED, DRAINED-MUSTARD GREENS, SPINACH GREENS, TURNIP GREENS

17 CALORIES

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1 – woman, 23-50 (0.9)
2 – girl, 15-18 (0.8)
3 – girl, 11-1/ 7)

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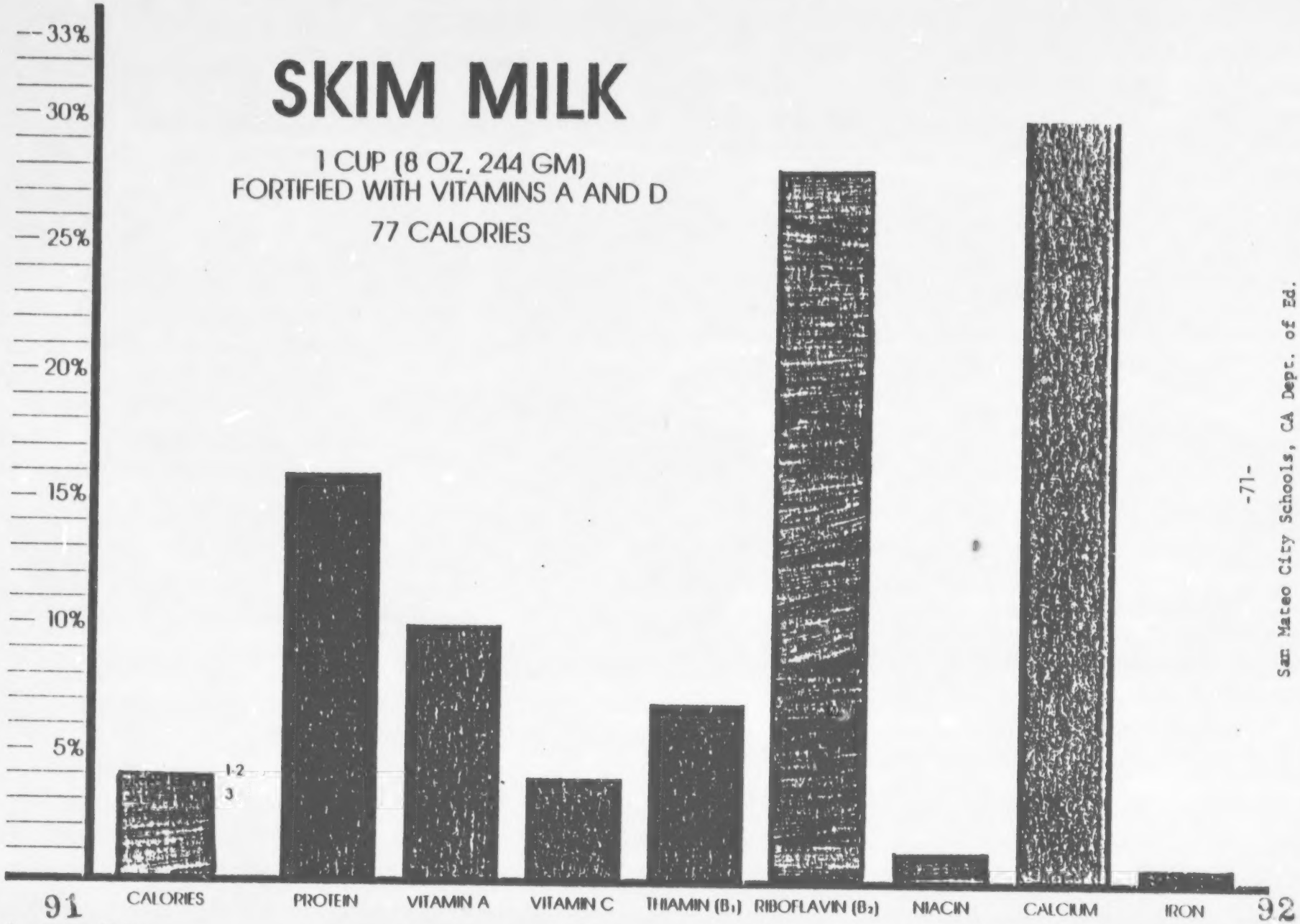

91

92

1 – woman, 23 50
2 – girl, 15 18
3 – girl, 11 14

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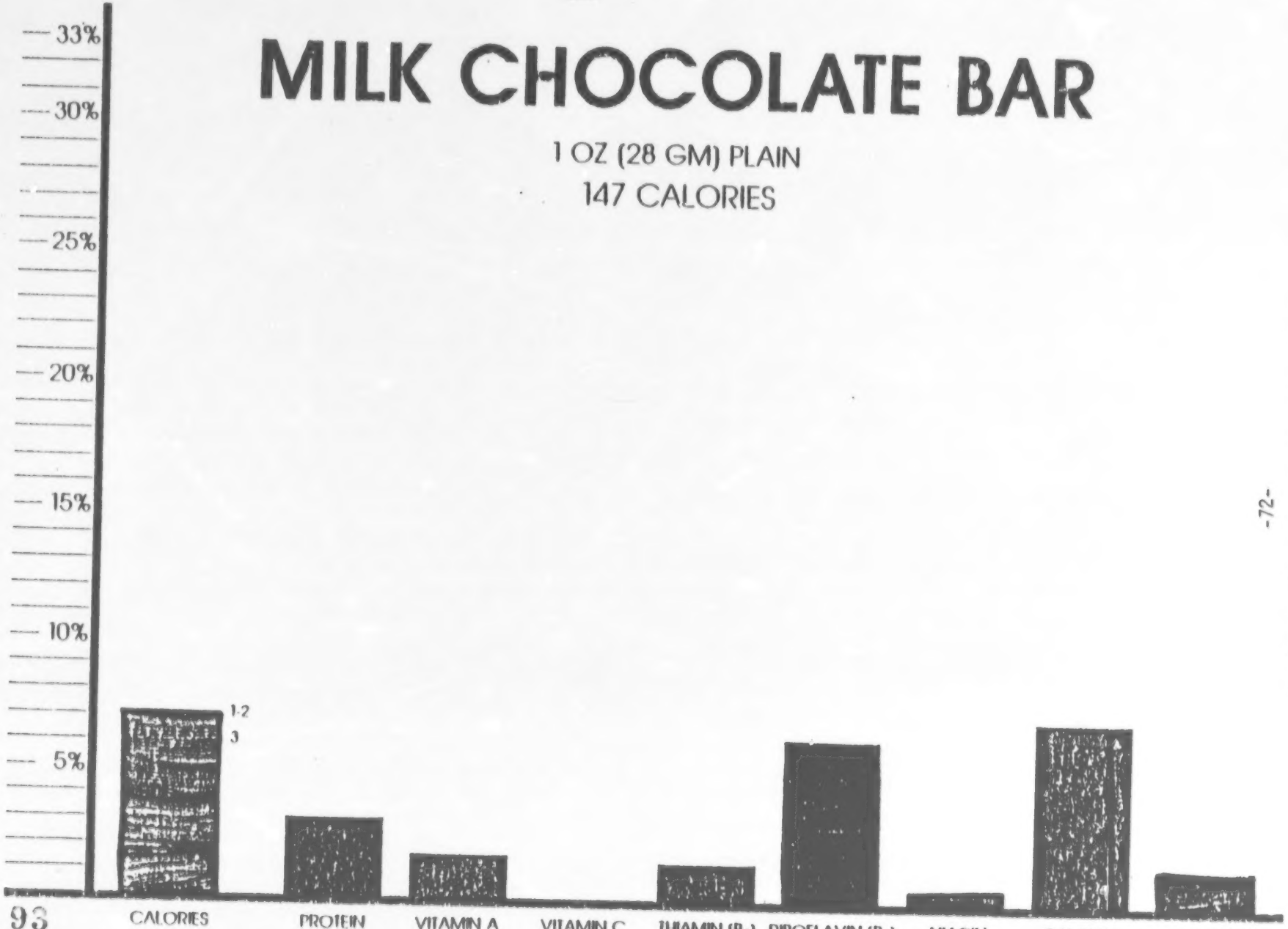
MILK CHOCOLATE BAR

1 OZ (28 GM) PLAIN
147 CALORIES



1 – woman, 23-50
2 – girl, 15-18
3 – girl, 11-14

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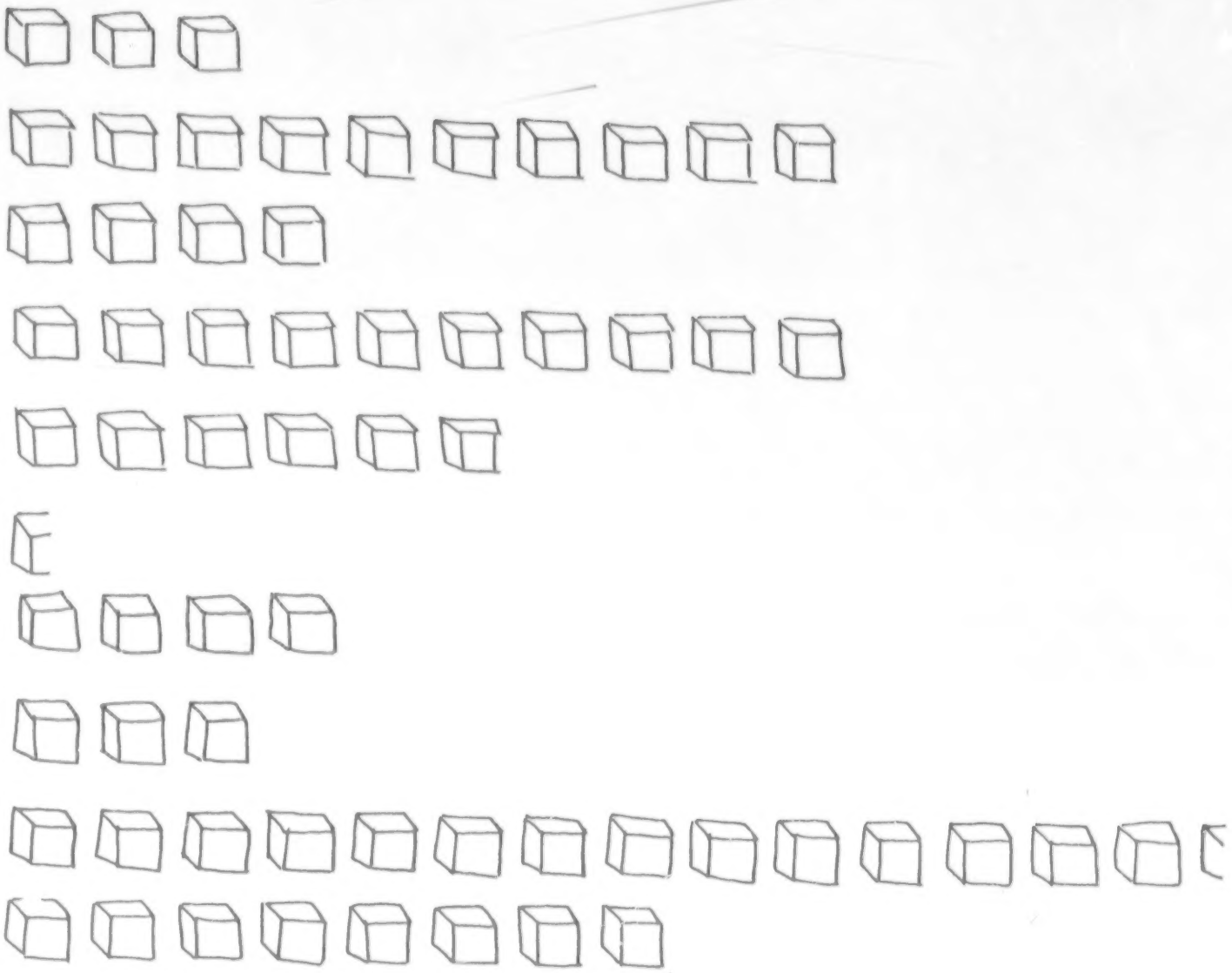
HIDDEN SUGAR IN FOODS



1 SUGAR CUBE = 1 TEASPOON

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QUESTIONS MOST FREQUENTLY ASKED ABOUT SUGAR

1. Is there a difference between sugar refined from sugar beets and sugar refined from sugar cane?

   Answer: There is no difference in the sugar refined from either cane or beet. Sugar cane and sugar beets are plants that are able to make sugar in larger quantity than any other plants. Sugar cane, a giant grass, thrives in a warm, moist climate, storing sugar in its stalk. The sugar beet grows best in a temperate climate and stores its sugar in its silver-white root. Chemically, sugar from both sources is the same.

2. What is raw sugar?

   Answer: Raw sugar is a tan to brown, coarse granulated solid obtained on evaporation of sugar cane juice. Raw sugar is processed from the cane at a sugar mill and then shipped to a refinery. It is about 96% sucrose. Although it is sweet to the taste and pleasant smelling, it contains such contaminants as soil, fibers, molds, yeast, bacteria, lint and waxes. Moisture content is about one-half percent.

3. Is raw sugar sold to consumers?

   Answer: No. The U.S. Food and Drug Administration notes raw sugar is unfit for direct use as food or as a food ingredient because of the impurities it ordinarily contains.

4. What is turbinado sugar?

   Answer: Raw sugar may be partially refined by washing in a centrifuge under sanitary conditions. Some molasses is removed in the washing process. Mineral matter, other solid matter and invert sugar are also present in turbinado sugar crystals. In total sugar content, turbinado is closer to refined sugar than raw sugar.

5. Is turbinado sugar sold to consumers?

   Answer: Yes. Turbinado sugar can be purchased in many health stores and some supermarkets. It is used by some companies for the manufacture of food products. If turbinado sugar has been produced under proper conditions, it is edible. However, some samples have been found to contain the same contaminants present in raw sugar. When this occurs, it is in violation of U.S. Food and Drug regulations.

6. What is brown sugar?

Answer: Brown sugar consists of sugar crystals contained in a molasses syrup with natural flavor and color components.

Most sugar refiners produce brown sugar by boiling a special syrup containing the necessary flavor and color ingredients to a mass of crystals and syrup in a vacuum pan. This mass is spun in a centrifuge, but not washed, so the sugar crystals still retain some of the syrup with its brown sugar flavor and color. Some refiners make brown sugar by adding syrup to a refined white sugar in a mixer. Brown sugar produced either way is much the same.

7. How can brown sugar be stored to prevent lumps?

Answer: Brown sugar is marketed in some areas in polyethylene plastic bags which can be closed snugly to retain the sugar's natural moisture. Brown sugar purchased in cardboard cartons should be stored in a cool, moist place. If you lack an ideal storage place, empty the sugar into a rustproof container or heavy moisture-proof plastic bag and keep tightly closed.

When brown sugar dries out and hardens, empty it into a rustproof container. Place a piece of plastic wrap or foil on top of the sugar. Dampen a wad of paper towel (not dripping wet); place on the plastic wrap or foil, and cover container tightly. The sugar will absorb the moisture and become soft in 8 to 12 hours. Then remove the paper towel and keep the container tightly closed.

To soften brown sugar quickly, heat it in a 250 degree to 300 degree oven. Watch it carefully and as soon as it is soft, measure the amount you need. When the sugar cools, it will become hard again and should be softened using the wet wad of paper method described above.

8. Can brown sugar be substituted for granulated sugar in a recipe?

Answer: Yes, if the flavor of the sugar does not influence the recipe results. Pack the brown sugar when measuring or you will be using less sugar than the recipe requires.

9. What is the difference between confectioner's sugar and powdered sugar?

Answer: The two terms refer to the same product. In the East, the term confectioner's sugar is more commonly heard; whereas in the West, powdered sugar is the more common term. Years ago, in New England, the term powdered sugar was used to refer to a fine granulated sugar similar to superfine granulated sugar sold today. Much confusion resulted.

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10. How can powdered (or confectioner's) sugar be stored to prevent lumps?

Answer: Powdered sugar should be stored in airtight containers to keep the moisture out once the box has been opened. When powdered sugar absorbs dampness and then dries, lumps form. This is why about three percent cornstarch is added to prevent caking. (Brown sugar is the opposite because you want to retain the moisture.) Sift powdered sugar if lumps have formed or if the sugar has been standing in its container for a long period.

11. What is superfine or ultra-fine sugar?

Answer: It is a very fine-grained granulated sugar. Regular granulated sugar is used for normal baking, canning and table use, while superfine granulated is ideal for extra fine textured cakes and meringues, sweetening fruits and iced drinks.

12. Are sugar cubes available in more than one size?

Answer: Yes, there are small cubes equal to one-half teaspoon sugar and larger cubes containing approximately one teaspoon sugar per cube.

13. What nutrients are present in sugar?

Answer: The nutrient in sugar and most other sweeteners is limited almost entirely to carbohydrate. These nutritive sweeteners are an important part of the body's total food energy supply. They also have an important role in making many foods taste more palatable. Vitamins and minerals are sometimes present in minimal amounts. That is why sweeteners are impractical as a source for adequate daily intake of necessary nutrients.

14. What is honey?

Answer: Honey is essentially an invert sugar. It is formed by an enzyme, honey invertase, from nectar gathered by bees. Honey varies in composition and flavor, depending on the source of the nectar (clover, orange blossom, sage, etc.). A typical analysis of honey would show (exclusive of undetermined substances): 38% fructose, 31% glucose, 1% sucrose, 9% other sugars, 17% water and 0.17% ash.

15. Is honey more nutritious than granulated, powdered or brown sugar?

Answer: A tablespoon of honey has more calories and carbohydrate content than granulated, powdered or brown sugar. It has less calcium phosphorous and iron than brown sugar. Honey contains minimal amounts of thiamin, riboflavin and ascorbic acid. These small amounts of vitamins and minerals in honey make it no more practical than sugar as a source for adequate daily intake of necessary nutritients.

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SNACK SUGGESTIONS

MILK GROUP: Milk
Flavored Milk, Cocoa
Ice Cream
Homemade Ice Cream, cones
Cheese Cubes, sticks, slices, simple fondue
Yogurt
Pudding, custard

MEAT GROUP:

Meats:
Little Franks
Liverwurst slices
Tunafish salad
Beef Jerky
Deviled Ham
Luncheon Meats
Fish Sticks

Nuts:
Peanut Butter
Mixed nuts
Pumpkin, Sunflower seeds

Dried Beans & Peas:
Refried Beans
Bean Dip
Split Pea Soup
Baked Beans
Navy Bean Soup
Three Bean Salad

Eggs:
Stuffed Eggs
Hard Boiled Eggs
Egg salad
Scrambled, fried eggs

VEGETABLE & FRUIT GROUP:

Vegetables:
Cherry Tomatoes
Celery sticks
Carrot Curls or sticks
Cauliflower Buds
Turnip Rings
Radishes
Artichokes
Green Pepper sticks
Zucchini strips
Broccoli Buds
Cucumber strips
Vegetable juices (tomato, carrot, V-8)
Spinach Salad

Fruits: Watermelon, Cantalope, other melons
Peel, remove seeds and cut into slices, cubes or balls.
Apples, sliced or quartered, applesauce, baked apples
Seedless Grapes
Oranges, halved, quartered or sectioned
Plums, Nectarines, Peaches, Apricots, Bananas
Pears, or Pineapple
Strawberries, Raspberries & Blackberries
Raisins, dried fruit (apples, pears, peaches, apricots, prunes)
Fruit Juices
Frozen Juice Bars (orange, grape, grapefruit)

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BREAD & CEREAL GROUP:

Breads: Assorted breads - rye, raisin, whole wheat, pumpernickel, french, bagels
Bread sticks, pretzels
Muffins, biscuits, tortillas, cornbread
Assorted crackers

Cereals: Hot and Cold cereals, cooked grits
Cooked Rice/cinnamon, sugar, butter, milk

Pastas: Cooked Pastas/grated cheese, butter

MIXED FOODS

*Cheese and bologna wedges
Baked Bean Sandwiches
Tostadas
Fruit and Cheese-kabobs
*Apple Sandwiches
*Mini-Pizzas
*Nachos
*Banana Treats
*Cottage Cheese Dip/crackers, vegetables
*Honey Milk Balls
*Nut 'n Honey Treats

*Bologna and Cheese Wedges

3 slices Bologna
2 slices American Cheese

1. Stack bolcgna alternately with cheese
2. Cut as you would cut a pie into 8 wedges
3. Stick toothpicks through each wedge to hold together.

*Apple Sandwiches

1. Cut apple into thin slices
2. Make sandwich by taking two slices of apple--spread one slice with cream cheese, cheese spread, or peanut butter and top with second slice.

*Mini-Pizzas

1 can (6 oz.) tomato paste
¼ tsp. Oregano
¼ lb. cheddar or mozzarella cheese
1 tsp. garlic salt
1/8 lb. salami or pepperoni

Heat oven to 400°. Combine tomato paste, garlic salt and Oregano. Cut cheese and salami into tiny cubes. Spoon small amounts of tomato mixture on melba or cracker rounds. Top with cheese and meat cubes. Sprinkle with oregano. Bake 3 to 5 minutes or until cheese melts. Makes 5-6 dozen.

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*Nachos

1 pkg. of tortillas
1 pkg. of Monterey Jack cheese slices
1 can of green chiles

1. Lay cheese slices on one side of tortilla.
2. Add green pepper to cheese.
3. Fold over and broil on both sides until cheese melt.

*Banana Treats

1. Cut banana in 1½" pieces
2. Dip in fruit juice
3. Roll banana pieces in coconut, wheatgerm, or chopped nuts

*Cottage Cheese Dip

Mix together 1 pound (2 cups) creamed cottage cheese, ½ cup minced parsley, ¼ cup minced green pepper, 1 tbsp. finely snipped chives. Makes 2 cups.

*Honey Milk Balls

Yield 30 small balls

¼ cup honey
¼ cup peanut butter
½ cup non-fat dry milk
½ cup crushed cereal flakes

1. Mix honey and peanut butter.
2. Gradually add milk, mixing well. Chill for easier handling.
3. Form into balls with greased hands.
4. Roll in crushed cereal flakes.
5. Chill until firm.
6. If desired, use the mixture for stuffing celery or as a spread on toast or graham crackers.

*Nut 'N Honey Treats

½ cup instant non-fat dry milk (in dry form).
½ cup honey or corn syrup
½ cup peanut butter
½ cup seedless raisins
¼ cup sesame seeds (optional)
1 cup chopped peanuts
1½ cups All-Bran Cereal

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Nut 'N Honey Treats

Directions:

1. Measure non-fat dry milk, honey and peanut butter into mixing bowl. Beat until thoroughly combined. Mix in raisins, sesame seeds and ½ cup of the chopped peanuts. Add All-Bran Cereal and continue mixing until all ingredients are well blended.

2. Using level measuring tablespoon to portion, shape mixture into balls. Roll in the remaining chopped peanuts to coat. Store in tightly covered container.

Yield: About 2½ dozen Nut'N Honey Treats, 1½ inches in diameter.

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Calories vs. Nutrients

↑Calorie ↑nutrient

Meat, eggs, legumes, Milk, cheese, nuts.

↓calorie ↑nutrient

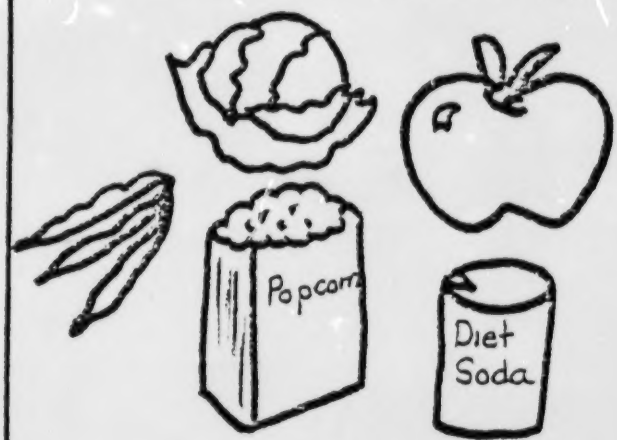
Tomatoes, citrus, carrots, skim milk, fish

↑calorie ↓nutrient

"junk food"

Candy, cake, soda pop, oil, popsicles, butter

↓calorie ↓nutrient



Lettuce, apples, green beans diet soda, popcorn

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Sugar Content of Commercially Available Breakfast Cereals

Commercial Cereal Product	% Total Sugar Content
SHREDDED WHEAT (large biscuit	1.2
SHREDDED WHAT (spoon size biscuit)	1.6
CHEERIOS	2.7
PUFFED RICE	2.4
UNCLE SAM CEREAL	3.6
WHEAT CHEX	3.5
GRAPE NUT FLAKES	3.9
PUFFED WHEAT	4.2
ALPEN	8.5
POST TOASTIES	5.8
PRODUCT 19	5.8
CORN TOTAL	5.8
SPECIAL K	10.8
WHEATIES	8.9
CORN FLAKES (Kroger)	6.9
PEANUT BUTTER	6.3
GRAPE NUTS	7.7
CORN FLAKES (Food Club)	9.1
CRISPY RICE	8.8
CORN CHEX	8.4
CORN FLAKES (Kellogg)	14.2
TOTAL	9.4
RICE CHEX	10.3
CRISP RICE.	10.9
RAISIN BRAN (Skinner)	18.9
CONCENTRATE	12.3
RICE CRISPIES (Kellogg)	12.9

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RAISIN BRAN (Kellogg) 24.9
HEARTLAND (with raisins) 19.11
BUCK WHEAT 15.4
LIFE 17.3
GRANOLA (with dates) 17.7
GRANOLA (with raisins) 18.3
SUGAR FROSTED CORN FLAKES 27.4
40% BRAN FLAKES (Post) 18.8
TEAM 27.0
BROWN SUGAR-CINNAMON FROSTED
MINI WHEATS 16.3
40% BRAN FLAKES (Kellogg) 18.3
GRANOLA 17.2
100% BRAN 19.2
ALL BRAN 21.6
GRANOLA (with almonds and filberts) 22.6
FORTIFIED OAT FLAKES 23.4
HEARTLAND 26.3
SUPER SUGAR CHEX 25.3
SUGAR FROSTED FLAKES 30.8
BRAN BUDS 32.3
SUGAR SPARKLED CORN FLAKES 34.0
FROSTED MINI WHEATS 34.0
SUGAR POPS 40.7
ALPHA BITS 40.9
SIR GRAPEFELLOW 43.8
SUPER SUGAR CRISP 45.2
COCOA PUFFS 46.5
CAP'N CRUNCH 44.1
CRUNCH BERRIES 44.4
KABOOM 46.8
FRANKENBERRY 46.6
FROSTED FLAKES 46.9
COUNT CHOCULA 47.9
ORANGE QUANGAROOS 45.3
QUISP 45.5
BOO BERRY 48.5
VANILLY CRUNCH 46.5

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BARON VON REDBERRY	.47.3
COCOA KRISPIES	.46.7
TRIX	.50.7
FROOT LOOPS	.47.9
HONEYCOMB	.51.6
PINK PANTHER	.50.5
CINNAMON CRUNCH	.53.5
LUCKY CHARMS	.58.0
COCOA PEBBLES	.54.1
APPLE JACKS	.55.5
FRUITY PEBBLES	.56.2
KING VITAMAN	.61.6
SUGAR SMACKS	.63.7
SUPER ORANGE CRISP	70.8

MEAN	.27.4
S.D.	.21.37

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from: Journal of Dentistry for Children

WHAT ELSE DO YOU NEED TO KNOW ABOUT IRON?

Vitamin C helps your body to absorb more iron if you eat vitamin C foods with high iron foods. The following foods are high in vitamin C:

Broccoli

Brussels Sprouts

Cabbage

Cantaloupe

Cauliflower

Grapefruit

Green Pepper

Lemons

Greens (collard, kale, mustard, turnip)

Oranges

Strawberries

Tomato or juice

Cooking food in cast iron cookware helps to add extra iron to your diet, especially if you are cooking with a high acid food like tomato sauce.

Spaghetti sauce cooked in cast iron cookware has 29 times more iron than sauce cooked in glassware.

Apple butter cooked in iron cookware has 112 times more iron than apple butter cooked in porcelain ware!

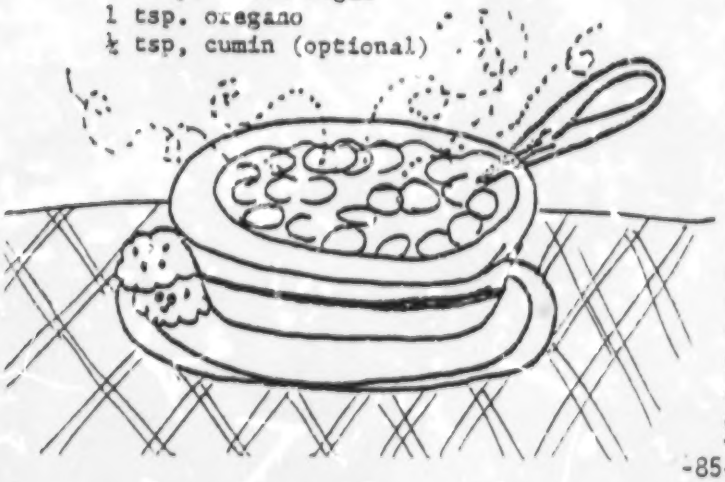
Even gravy has 14 times more iron when cooked in cast iron instead of in porcelain or glass.

The iron present in meats is absorbed easier than iron from vegetable sources. So, vegetarians must be sure to eat plenty of iron-rich vegetables, whole grains, and beans.

IRON-RICH RECIPES

CHILI BEANS

3 Tbsp. oil
4 cups dry beans (kidney, red, pinto)
1 large can of tomatoes (or 1 C. fresh)
2 Tbsp. tomato paste
Chili powder to taste
1 medium chopped onion
1 teaspoon garlic powder (or 1 Clove)
1 cup corn
1 green pepper, diced
2 tsp. salt
1 Tbsp. brown sugar
1 tsp. oregano
½ tsp. cumin (optional)



Soak beans overnight. Cover with fresh water and simmer until almost tender. S Saute onion and garlic (if fresh) in oil until onion is soft. Add green pepper. Saute another 2-3 minutes. Add 1 cup water tomatoes, and corn. Mash 2 cups of the beans and add to pot along with whole beans and seasonings. Simmer for about 30 minutes.

JERKY

1½ lbs. beef flank, round steak or other lean meat
1/3 cup soy sauce
1 clove garlic, crushed
½ tsp. lemon pepper

Freeze steak until firm enough to slice easily. Slice meat with the grain into 1/4-1/4 inch slices 6-8 inches long. Combine remaining ingredients and soak beef mixture 15-20 min. Drain and arrange in a single layer on a rack set in a shallow baking pan. Bake in a very slow oven (140-150 degree F) over night. Prop oven door open with a spoon. Store tightly covered.

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+WHAT IS IRON?

Iron is a mineral needed by our bodies to produce healthy blood cells. It is part of the hemoglobin in these blood cells. Hemoglobin gives blood its red color, and works in the blood cell to carry oxygen to all parts of the body.

Too little iron in your blood can result in iron deficiency anemia., If you have low iron in your blood (eg. iron-deficiency anemia), you may be more tired, pale, irritable, and just not as perky as normal. Eating foods high in iron is important for everyone.

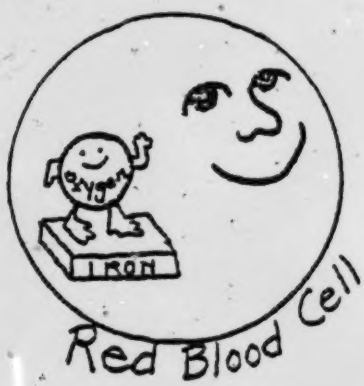
WHO NEEDS EXTRA IRON?

Women usually need more iron than men. Pregnant women always need extra iron. Infants, children, and teenagers also need lots of iron to keep their blood healthy and to produce new blood cells as their bodies grow.

HOW MUCH IRON DO YOU NEED?

Iron needs are expressed in milligrams (mg). The recommended daily allowances are:

Infants and children 1-3	15 mg.
Children 4-10	10 mg.
Males 11-51+	10 mg.
Non-pregnant females 11-51+	18 mg.
Pregnant females	18+ mg.
Breast feeding mother	18 mg.



WHAT FOODS ARE GOOD IRON SOURCES?

These foods have 10 mg. of iron:

- CREAM OF WHEAT (2/3 cup, cooked)
- PORK OR BEEF LIVER (4 ounces)
- PRUNE JUICE (1 cup, canned)

These foods have 4 mg. of iron:

- BEEF (4 ounces) PORK (4 ounces)
- LAMB (5 ounces) PUMPKIN SEEDS (1¼
- OYSTERS (6 medium) SARDINES (10

These foods have 2 mg.

- DRIED APRICOTS (6 halves)
- COOKED DRY BEANS (½ cup) (pinto, red, kidney, garbanzo)
- BEET GREENS (½ cup, cooked)
- CHARD (2/3 cup, cooked)
- CHICKEN (5 ounces)
- CLAMS (½ cup, canned)
- DATES (7 medium)
- EGGS (2 medium)
- HAM (3 ounces)
- LIVERWURST (1 slice)
- DRIED PEACHES (5 halves)
- " PRUNES (5 large dried)
- RAISINS (½ cup)
- SCALLOPS (3 pieces)
- WHEAT GERM (2 Tablespoons)
- SESAME SEEDS (3 oz. hulled) (1 oz. whole)
- SHRIMP (½ cup cooked)
- SPINACH (½ cup cooked)
- SUNFLOWER SEEDS (1 oz)
- TUNA (2/3 cup)
- TURKEY (3 ounces cooked)
- VEAL (3 ounces cooked)
- WHOLE WHEAT (2/3 cup cooked)

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Which contains a greater percentage of sugar: *Heinz Tomato Ketchup* or *Sealtest Chocolate Ice Cream? Wishbone Russian Dressing* or *Coca Cola? Coffee-mate Non-Dairy Creamer* or a bar of *Hershey's Milk Chocolate?*

Unless you have a food-analysis laboratory in your basement, the answers might come as quite a surprise. The *Heinz Tomato Ketchup* is 29 percent sugar, compared to 21 percent for the ice cream. If you put *Wishbone Russian Dressing* on a salad, you're pouring 30 percent sugar, a proportion more than three times that of *Coke*. The *Coffee-mate*, which is supposed to be a substitute for cream, contains 65 percent sugar, against 51 percent for a *Hershey* bar.

Those were some of the results when CU analyzed 24 common food products to determine what proportion of their weight consisted of sugar. (When we use the word "sugar," we're referring to all varieties of sugars, including those in corn syrup, honey, fruit, and vegetables, as well as ordinary table sugar, or sucrose.)

When it comes to sugar, much of the food industry apparently operates on the assumption that the consumer has three taste preferences: sweet, sweeter, and sweetest. If you prepare your chicken with *Shake 'N Bake Barbecue Style*, you're getting a coating that's 51 percent sugar. A bowl of *Quaker 100% Natural Cereal* gives you 24 percent sugar. If you munch on a *Ritz Cracker*, you know you're not eating a cookie, but you might not know it's 12 percent sugar.

A look at product ingredients on supermarket shelves reveals the difficulty of finding almost any type of prepared food product without sugar in it. It's used not only in sweet baked goods, desserts, and soft drinks, but also in sauces, many baby foods, almost all fruit drinks, salad dressings, canned and dehydrated soups, pot pies, frozen TV dinners, bacon and other cured meats, some canned and frozen vegetables, most canned and frozen fruits, fruit yogurt, and breakfast cereals. If you eat a hot dog, there is likely to be sugar in the meat, in the ketchup or relish, and in the bun. There is even a bit of sugar in many brands of salt. And for Fido, there's sugar in *Gaines-burgers* dog food.

What is all this added sugar—an average of 128 pounds consumed by every man, woman, and child in the United States last year—doing to us? It depends on whom you listen to. The Sugar Association calls it "one of our cheapest sources of food energy" and "the catalyst that makes eating pleasurable." Kellogg Co., which makes various brands of presweetened cereal, says that sugar is "a solution to some world hunger problems."

But to critics, sugar represents "empty calories," accompanied by a host of medical ills. Sugar has been blamed not only for heart disease and diabetes, but also for a list of afflictions ranging from acne to varicose veins—not to mention obesity and tooth decay.

Where does the truth lie? In this article, we'll take a look at what sugar is, how it is used by the body, and what is known about its effects on health. We'll also answer some of the questions most frequently asked about sugar: How much is really necessary in a proper diet? Is brown sugar better for you than that white refined stuff? Is the natural sugar in fruit and honey somehow different?

FROM SUNLIGHT TO HOSTESS TWINKIES

Sugar is the most fundamental of all foods. In converting sunlight into food, green plants first make simple sugars. The starch in a potato comes from sugar formed in the leaves of the potato plant. Wood is built from sugar made in the tree's leaves. The oil in a peanut, the protein in wheat grains, and the perfume of a rose are all developed from sugar by the plant. Except for their mineral content, in fact, all components of a plant are derived from sugar.

Although the main sugars in fruits are usually fructose and glucose, many fruits and some vegetables also contain modest amounts of sucrose, which is chemically identical to the table sugar used in the home. Apples, apricots, beets, carrots, corn, peas, peaches, plums, and soybeans, for example, all contain from 3 to 7 percent sucrose. Virtually all the sucrose our early ancestors ate came from fruits and vegetables.

Sugar was cultivated as early as 325 B.C. in India, but it remained a scarce luxury until Columbus brought sugar cane to the Caribbean in 1493. Within the next hundred years, sugar became one of the valued products of the New World, often plundered by pirates along with silver and gold. Large-scale cultivation of sugar beets came much later, when the Napoleonic wars cut off shipments of Caribbean sugar to France. Napoleon then issued a decree in 1811 spurring a vast increase in French production of beet sugar.

In the chronicle of sugar, however, Columbus and Napoleon emerge as mere pikers alongside 20th-century food processors. Within the span of a few generations, the food industry has converted sugar from a household condiment to a ubiquitous component of the average person's diet.

Between 1900 and 1970, world production of sugar climbed from 8 million to 70 million tons. On average, Americans now get about 24 percent of their calories from sugar. Only 3 percent comes from the sugar in fruits and vegetables. Another 3 percent is from lactose, the milk sugar

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in dairy products. The vast bulk—18 percent of all the calories we consume—is from sugar that is added to our food. Whether in packaged salad dressing or in *Hostess Twinkies*, sugar is the leading food additive in the United States today.

WHY WE'RE HOOKED ON SUGAR

Long before babies are exposed to Saturday morning candy and cereal commercials, they show an innate preference for sweets. The sweeter the solution, the more vigorously a newborn infant will suck—and the more the infant will consume. Even a five-month human fetus will increase its swallowing rate when saccharin is injected into the amniotic fluid of the mother.

Why do we have a seemingly inborn desire for sweets? A commonly held theory is that in primitive times sweetness served as nature's guide to what foods were safe to eat. Generally, the fruits and vegetables that tasted sweet were nutritious and healthful, while foods that tasted bitter were frequently poisonous. The process of natural selection might have produced an instinct for sweet taste, since the animals that preferred sweet things would have obtained the nutrients necessary for survival. This theory is substantiated by the fact that cats are among the animals that don't have a pronounced sweet tooth. Their ancestors never needed to develop one, since they hunted meat exclusively.

Whatever natural desire we have for sugar is quickly reinforced. The word "sweet" in our language stands for something good, something desirable. And for many young children, the attraction of sweetness is underscored by thousands of TV commercials extolling sweet-tasting foods.

Meanwhile, we now have far less control over the amount of sugar we eat than did previous generations. In 1930, 64 percent of the sucrose used in this country was purchased directly by consumers for home use, while only 30 percent went to industry. By 1970, those percentages were more than reversed, with just 24 percent being bought by consumers directly and 65 percent going to industry. (The rest went to restaurants, hotels, and government.) This means that much of the sucrose we eat has already been added before the food is brought home.

Some of the sugar in processed foods serves functions other than adding sweetness. It retains and absorbs moisture, which keeps foods from drying out rapidly. It depresses the freezing point, making ice cream and other frozen desserts smoother. It can act as a preservative, and it can enhance the appearance of some foods.

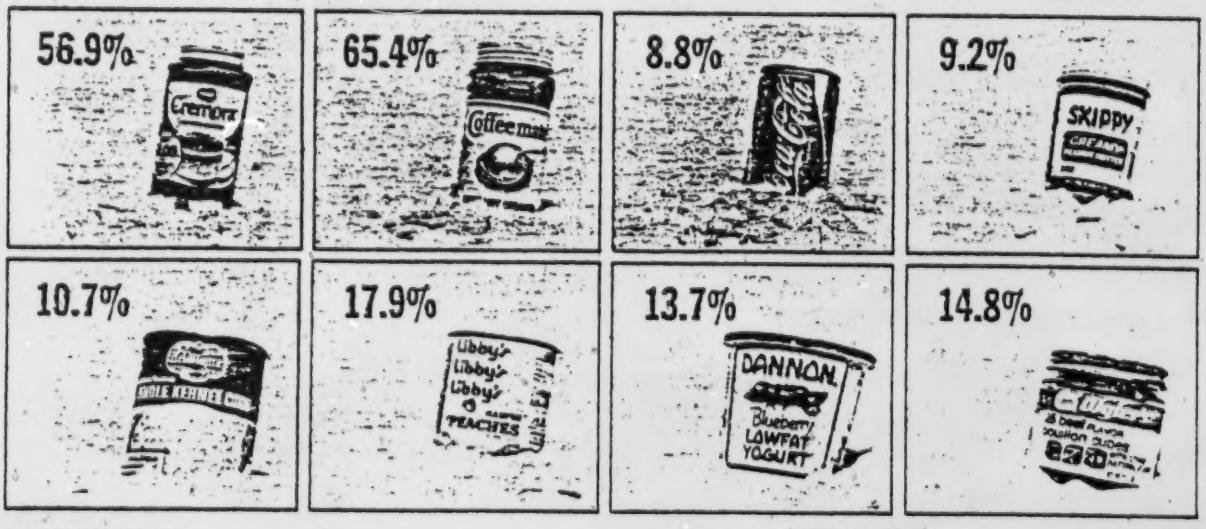
But much of the sugar used by industry seems to be related to two other factors: At around 10 cents a pound, sugar is much cheaper than many other ingredients. And many people like a sweet taste. The Senate Select Committee on Nutrition reported last year that "increased use of sugar is traceable in large part to the desire of food manufacturers to create unique food products with a competitive edge. Just recently, for example, Nabisco introduced an Oreo cookie with double the amount of sugar filling."

Food manufacturers insist that the percentage of sugar they use in foods results directly from the preference of consumer tasting panels. Yet they won't come out and say exactly what the total percentage is. You can look at the list of ingredients on the label, of course. But even then you frequently won't know where sugar ranks, because manufacturers can use different types of sweeteners and list each one separately.

Post Raisin Bran, for instance, lists sugar (sucrose) as its number three ingredient, corn syrup number five, and honey number seven. Together, those sugars might be the primary ingredient, but the purchaser won't know. As one father said in a recent television report on sugar: "What I didn't realize was that there's no place on the box that says there is 50 percent sugar or 55 percent sugar. So for most parents who only see a list of the vitamins stretched out, there's no way that they know that what they're feeding their children is candy, essentially."

The proliferation of sugar in food products is such that sometimes even company officials can't keep up. We asked a spokeswoman for Nabisco Inc. why *Ritz Crackers* had

HOW SWEET? HERE'S THE PERCENTAGE OF SUGAR CU FOUND IN 24 COMMON FOODS:



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sugar in it. "There's sugar in Ritz Crackers?" she responded. After looking at the list of ingredients, she said the sugar was there for flavor, and that the difference between a *Ritz* cracker and a cookie was that "a cookie would have more sugar in it."

HOW MUCH SUGAR ARE WE EATING?

Defenders of sugar are quick to assert that sugar consumption in the United States has remained basically unchanged in the last 50 years—slightly under 100 pounds per person per year. That's true, but there's a catch. The figure is for sucrose only.

Food processors have increased their use of a second type of sugar in recent years. Derived from corn starches, it is variously called corn syrup, corn sugar, or corn sweetener. The per-capita consumption of corn syrup has jumped from 13 pounds in 1960 to an estimated 32 pounds last year. So per-capita sugar consumption—sucrose, corn syrup, and minor sweeteners like honey—has actually grown 14 percent since 1960, from 112 to 128 pounds. That's more than one-third of a pound of sugar a day for each person.

What happens to all this sugar in the body? Basically, it is digested and used like any other carbohydrate. Nearly all carbohydrates are ultimately converted into glucose, the primary fuel of the body. Glucose, or "blood sugar," is delivered by the bloodstream to the liver, where it is converted and stored as glycogen until needed by the body. With the help of the hormone insulin, blood glucose then enters nearly all cells of the body and is used as an energy source. The glucose that isn't needed by the cells is metabolized in the liver into fatty substances called triglycerides, which are transported in the bloodstream to the fat depots of the body. The body can later draw upon those stores of fat if it needs energy during fasting or dieting.

Why, then, in view of the body's basic need for energy, is there anything wrong with eating sugar? The problem is that sugar, unlike most other sources of carbohydrate, contains no nutrients except calories. It's a classic constituent of "junk food"—generally, a processed food that's relatively high in calories, lacks any significant amounts of protein, vitamins, or minerals, and contains comparatively large quantities of fats or sugar. Essentially, there's absolutely no dietary requirement for sugar that can't be satisfied by other, more nutritious foods, such as fruits and vegetables.

There isn't even a need for sugar for so-called quick energy, to fuel a morning of tennis, skiing, or the like. Unless you fast for more than a day or two, your body has sizable reserves of liver glycogen to call upon. If you eat sugar before exercising, the sugar will quickly be metabolized and move into storage with your other fuel reserves.

If you get 20 percent of your calorie requirement from sugar, you have to rely on the other 80 percent of your diet to supply the other nutrients you need—no dietary feat for most people, but a neat trick for anyone trying to lose weight.

Moreover, while the amount of sugar we eat increases, the average per-capita consumption of flours and grains has dropped by more than half over the course of this century. Therefore we're getting more and more of our carbohydrates from sugar—the carbohydrate supplying the fewest nutrients.

In a recent report, the Senate Select Committee on Nutrition called for a 45 percent reduction in sugar consumption. We see little sense in picking an arbitrary percentage, but many people would do well to pay attention to the amount of sugar they're consuming. A lot of sugar certainly does you no good nutritionally, and it may contribute to certain health problems. Exactly which ones, however, has often been obscured by emotional debate.

SUGAR AND HEALTH

Here is what is known about sugar's relationship to some common health problems:

Tooth decay. The link between dental caries (cavities) and sugar is no longer a matter of controversy. There is now overwhelming evidence from animal experiments and human studies to implicate sugar in tooth decay.

Sugar serves as food for the bacteria normally present in the mouth. One of the byproducts of bacterial activity on sugar is glucan, a thick, gel-like substance that sticks tenaciously to the tooth surface and hastens the buildup of bacterial plaque. Another byproduct is a group of acids, includ-

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ing lactic, formic, and acetic acid. Held against the tooth surface by the plaque, the acids attack the tooth with a success that depends on the protective quality of the saliva and the tooth's vulnerability to decay.

There is not, however, a simple, direct relationship between the amount of sugar consumed and the number of cavities you'll get. In addition to your individual predisposition to cavities, a key factor is how much sugar gets stuck to your teeth, and for how long. Sticky candy, for instance, can do far more damage to teeth than a soft drink, because the sugar in liquids is more easily washed away. Note, though, that frequency of exposure also plays a role. Several soft drinks a day might do more damage than one piece of toffee a week. Moreover, the acid content of many soft drinks, such as cola beverages, can also contribute to erosions, a chemical wearing away of the teeth at the gumline.

Tests on humans have shown that sugar eaten as part of a meal causes less damage to teeth than the same amount of sugar consumed as a between-meals snack. This is probably because the other foods and liquids consumed during a meal help remove the sugar from tooth surfaces.

The bacteria in your mouth don't care whether the sugar has been put there by nature or by industry. You can damage a baby's teeth by putting fruit juices, or even milk, in a bottle at bedtime and allowing the baby to fall asleep while sucking. That lengthens the time the sugar in the drink is in contact with the baby's teeth.

Obesity. America as a nation is growing fatter. About one-third of the adult population is overweight—more than 10 percent above the normal weight for height. The National Center for Health Statistics recently released results of a weight study of 13,600 people checked from 1971 to 1974. Women under age 45 weighed 4.7 pounds more on average than women of equivalent height checked in a 1960 to 1962 study. Men under age 45 were 3.8 pounds heavier than their counterparts of a decade earlier, and those older than 45 were 4.8 pounds heavier.

Obesity is usually bad for a person's health. It increases the possibility that such disorders as heart disease, high blood pressure, diabetes, gallstones, varicose veins, back problems, and arthritis might develop or become more severe.

It's not sugar itself that makes you fat, of course. It's the total amount of calories you consume in excess of what you need. Sugar, like all other carbohydrates, contains four calories per gram, or 113 per ounce. But sugar-sweetened foods also tend to be those in which calories are highly concentrated, such as in pies, cakes, candy, and the like. And there's also the palatability factor: The presence of sugar in a food may tempt you to eat more of it.

If you're trying to lose weight, moreover, reducing your calorie intake without cutting sugar consumption means you probably won't get all the nutrients your body needs.

Diabetes. Since diabetics frequently have to reduce their sugar consumption dramatically, many people have come to think of diabetes as a disease caused by excess sugar. Actually, the causes are much more complex than that; and the role of sugar in the onset of diabetes still isn't clear—if, in fact, it plays any role at all.

Although diabetes has been known since antiquity, its cause or causes remain unknown. Genetic predisposition seems to play an important role. Medical studies have not been able to prove that sugar intake *per se* can cause diabetes. There might, however, be an indirect effect. Excessive consumption of sweets can contribute to obesity, and obese people have been shown to be more resistant than lean people to the action of their body's own insulin, the hormone that helps the body "burn" glucose. This factor may contribute to the development of the disease in overweight, middle-aged persons.

Heart disease. Most experts in the field see little support for the theory that sugar consumption contributes to heart disease. As one sums it up: "I would personally say the matter of sugar and heart disease is the least demonstrable problem with sugar."

There are some people, however, who have a tendency to develop high levels of serum triglycerides (a factor that may contribute to heart disease) from carbohydrate foods. And sugar, of course, is a carbohydrate. Since many of these people are obese, the total calories in their diet may be con-

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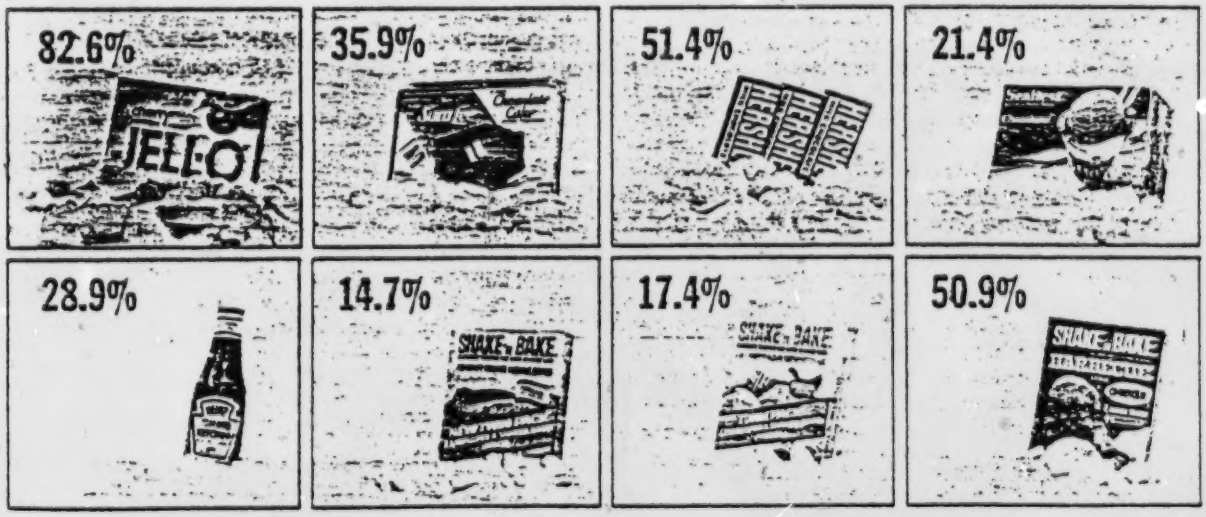

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sidered as important as their carbohydrate intake. Hence, weight reduction as well as carbohydrate restriction helps to reduce triglyceride levels in those patients.

Basically, if you are in good health and not overweight, the amount of sugar in your diet needn't worry you so far as heart disease is concerned. If you are overweight, it's advisable to lose weight by lowering your customary intake of both fats and sugars. In that way, you may reduce your risk of developing cardiovascular problems as well as other disorders associated with obesity.

Apart from sugar's role in tooth decay and its potential contribution to obesity, there is little evidence to convict sugar of the catalog of health crimes it is accused of. Allegations linking sugar to various disorders often change with the times. Acne was once thought to be caused by eating sweets—particularly chocolate. But medical studies failed to demonstrate any association. More recently, sugar has purportedly been linked to such ills as hyperactivity in children, hypoglycemia, and others. But again, the allegations are either unproven or anecdotal.

Nevertheless, sugar's contribution to tooth decay and obesity is reason enough to approach sweets as an occasional treat rather than as a steady diet. And to that end, it would be helpful if food manufacturers were required to tell consumers clearly just how much sugar is really in their products. You should know that spreading two tablespoons of ketchup on a hamburger means you're about to consume more than a teaspoon of sugar.

ARE ALL SUGARS THE SAME?

If you read labels carefully in a "health-food" store, you would no doubt conclude that white refined sugar is rated on a par with DDT and arsenic. But that doesn't mean you won't find sugar in "health-food" products. So-called health breads, for instance, are often chock full of honey, molasses, brown sugar, or "raw" sugar. It's just white refined sugar that's considered to be the villain.

Is there any truth to the notion that one sugar is somehow better for you than another? Some sugars aren't quite as bad for your teeth as sucrose. Otherwise, there's virtually no difference among them worth worrying about. To understand why, it's necessary to look at how the most common commercial types of sugar differ.

There are more than 100 sweet substances identified as sugars. These include fructose (fruit sugar), dextrose (one of the sugars made from corn starch and chemically identical to glucose), lactose (the sugar in milk), and maltose (malt sugar, formed from starch by the action of yeast). But the word "sugar" is commonly used to refer to sucrose, which comes from sugar cane or sugar beets. In a typical manufacturing operation, the sugar cane is shredded into small pieces, crushed, and the juice separated. Processing causes the sugar in the juice to crystallize, forming sugar crystals and syrup. These are separated by a mechanical device into the end products, raw sugar and molasses. Then comes a washing and filtering, and the raw sugar is eventually turned into refined white sugar.

Raw sugar is banned in the United States, for good reasons: It contains such contaminants as insect parts, soil, molds, bacteria, lint, and waxes. When it's partially refined to make it sanitary, it can be sold as "turbinado" sugar. Brown sugar consists of the sugar crystals coated with some molasses syrup. Most refiners make it by spraying syrup onto refined white sugar.

Brown and turbinado sugar might look more healthful because of their dark color and distinctive odor. But the few additional nutrients they contain are so minuscule in quantity that for all practical purposes they're worthless. The nutrients simply aren't there in the usable parts of the sugar cane or sugar beet plant to be refined out.

Honey is formed by an enzyme from nectar gathered by bees. Depending on where the nectar comes from, honey can differ in composition and flavor. But all honey is a blend of a number of different sugars, largely fructose and glucose. Like brown sugar, honey has a few nutrients—mainly potassium, calcium, and phosphorus. But, again, they're scant. You'd have to eat 91 tablespoons of honey each day to get your recommended daily requirement of potassium, 200 for calcium, and 267 for phosphorus. There's no evidence that honey is easier to digest than other sugars. When you eat table sugar, your body breaks the sucrose down into fructose and glucose, the two leading ingredients of honey.

What about substituting honey for sucrose in cooking or in your coffee to get more sweetening power per calorie? It is true that some batches of honey can be as much as 40 percent sweeter than sugar (although other batches can actually be less sweet). A cup of honey has only 23 percent more calories than a cup of sugar. So with a little luck, you do get more sweetening power per calorie. But substituting honey will change the character of the food you're preparing, meaning you might have to alter the cooking time or some other aspect of the recipe.

Remember, finally, that sucrose is a "natural" substance; it comes from a plant. In the same way, nature has put sugar in other fruits and vegetables. Just because a bottle of apple juice says "unsweetened" or "no sugar added," it doesn't mean that sugar wasn't there in the first place. The natural sugars in orange, apple, and many other fruit juices make them slightly higher in total sugar than a bottle of *Coca Cola*. But there are two important differences: The fruit juices give you other nutrients besides calories, and one of their principal sugars (fructose) is somewhat easier on tooth surfaces than sucrose.

Accordingly, if you're concerned about nutrition or your teeth, try to satisfy your craving for sweets with fresh fruits and fruit juices. Brown sugar, turbinado sugar, and the like offer no health advantage over the undisguised white stuff.

Meanwhile, even if you want to substitute nutritious foods for that one-third of a pound, or 600 calories, of sugar the average American eats daily, you may still find yourself thwarted by the lack of information on product labels. Manufacturers can use several different sugars to avoid putting the word "sugar" at the head of their ingredients list. Until a government agency acts to require a clear revelation of sugar percentage in processed foods, all you can do is to check the label to see which sugars have been added. As a key, look for any word ending in "ose," such as maltose or dextrose. "Corn syrup" or "corn sugar" is a commonly used sucrose substitute. Ultimately, they all mean the same thing: You're buying sugar.

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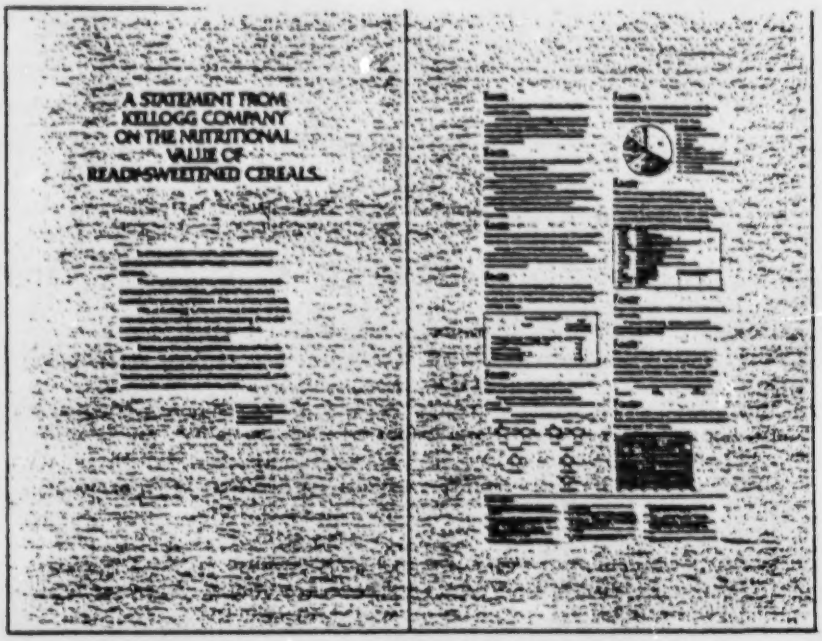
Sweet Talk about Sweetened Cereals



Late last year, during an investigation of advertising aimed at children, the Federal Trade Commission took a particular interest in the promotion of highly sweetened cereals to youngsters. Kellogg Co. showed up to defend the nutritional quality of its products. At about the same time, Kellogg apparently decided to take its case to the public.

In mid-November, the two-page ad shown above appeared in newspapers in Boston, Chicago, Detroit, Los Angeles, New York, and Washington, D.C. The body of the ad presented a list of bold-faced "facts"—or, more accurately, assertions. The assertions merit some comment.

Kellogg says: "Ready-sweetened cereals are highly nutritious foods."

Some cereals are highly nutritious, and some aren't. But the presence of sugar or other sweeteners adds nothing except calories to a cereal's nutritive value. When CU last tested cereals (see CONSUMER REPORTS, February 1975), Kellogg's presweetened *Sugar Frosted Flakes*, *Sugar Smacks*, *Sugar Pops*, and *Cocoa Krispies* were among those "judged of sufficiently low nutritional value to be considered deficient."

Kellogg says: "Ready-to-eat cereals do not increase tooth decay in children." Kellogg points out that three clinical studies found no relationship between the amount of cereals consumed, whether ready-sweetened or regular, and the incidence of tooth decay in children.

Kellogg does not point out, however, that the authors of one of those studies stated that "this conclusion must not be construed to dilute in any way the evidence associating dental caries with sucrose in general."

Essentially, it's not cereals that increase tooth decay, but the total aggregate of sugars in cereals, sweets, and numerous other processed foods. As Dr. W. H. Bowen of the National Caries Program at the National Institutes of Health commented: "There is now an overwhelming abundance of evidence from experiments carried out in animals (both rodents and primates), epidemiological studies in humans, and kindred other bodies of evidence that proves quite conclusively . . . that the development of caries and ingestion of sugar are closely associated."

Kellogg says: "Ready-to-eat cereal eaters skip breakfast less than non-ready-to-eat cereal eaters." The supporting text cites Kellogg's own analysis of an unpublished study. (The analysis involved only 250 children.)

It's probably churlish of us to point out that no comparison is made between eaters of ready-sweetened cereals and eaters of unsweetened cereals. The ad speaks only of "ready-to-eat" cereals and "nonready-to-eat" (or cooked) cereals. It's hard, therefore, to conclude that failure to *presweeten* a cereal will produce an epidemic of breakfast skipping.

Kellogg says: "There is no more sugar in a one-ounce serving of a ready-sweetened cereal than in an apple or banana or in a serving of orange juice."

Perhaps not. But Kellogg's presentation is comparing *one ounce* of cereal with servings of fruit that weigh at least four times as much. To detect that thumb on the scales, a consumer would have to know that there are about 28 grams in an ounce, and that a medium apple or banana each weighs about 115 grams. Moreover, the percentage of sugar in food may play a role in tooth decay. With that in mind, let's compare the data Kellogg presented with a factor the ad didn't mention—the sugar's concentration:

	MENTIONED	NOT MENTIONED
FOOD	Total sugar content per serving	Sugar concentration
Kellogg's Sugar Frosted Flakes (1 oz.)	11 grams	39%
Kellogg's Apple Jacks (1 oz.)	16 grams	57%
Apple (1 med.)	17 grams	11%
Orange Juice (6 oz.)	17 grams	9%
Banana (1 med.)	29 grams	19%

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Kellogg says: "The sugars in cereals and the sugars in fruit are chemically very similar." Supporting text notes that the principal sugars in cereals are sucrose and glucose, and that fruits contain those sugars plus fructose.

True, sucrose is sucrose and glucose glucose, whether in a cereal or in a fruit. But fruit sugars frequently include a relatively high percentage of fructose, which is somewhat less conducive to dental decay than sucrose.

Kellogg says: "Ready-to-eat cereals provide only 2 percent of the total consumption of cane and beet sugars in the U.S."

But the use of sucrose in processed foods, including breakfast cereals, doubled between 1940 and the present. And among the uses of sugar Kellogg mentions (beverages, baked goods, confectionery, ice cream, and the like), breakfast cereals are perhaps the single category most directly promoted to young children.

Kellogg says: "On the average when children eat ready-sweetened cereals as part of a breakfast, the nutrient content of that breakfast is greater than when they eat a non-ready-to-eat cereal breakfast."

Read that statement carefully, for it does not compare the nutritive contents of presweetened and unsweetened dry cereals, nor does it compare dry cereals (with or without sugar) with cooked cereals. Rather, the ad refers to the relative nutrient content of the *breakfasts* eaten by some 250 children in an unpublished study. Even so, Kellogg's nutrient chart shows that the cooked-cereal breakfast surpassed the other in protein content, as well as in phosphorus, magnesium, and zinc. Moreover, as CU's 1975 cereal study demonstrated, an important factor is the biological availability of nutrients. The nutrients that occur naturally in foods are apt to be used by humans to a greater extent than nutrients added to a food.

Kellogg says: "Most ready-to-eat cereals are consumed with milk."

Probably true—although we wonder how many parents have observed their children nibbling on dry, ready-sweetened cereals as a snack. As consumer reporter Sidney Margolius once observed, "If milk is the main nutritional value in eating dry cereals, then obviously there are easier ways to drink it than with a spoon." In any event, the statement tells us nothing about any differences between ready-sweetened and unsweetened cereals, since the subject is "ready-to-eat" cereals, not "ready-sweetened" cereals.

Kellogg says: "On the average when children eat ready-sweetened cereals as part of breakfast, consumption of fat and cholesterol is less than when they eat a non-ready-to-eat cereal breakfast."

Again, the data source is an unpublished study. And again, the statement by Kellogg makes no comparison between ready-sweetened and unsweetened ready-to-eat cereals (the comparison is between *breakfasts* that include either a cooked or an uncooked cereal). Instead, it plays on dietary scare words such as "fat" and "cholesterol," which have nothing to do with the cereals themselves.

Kellogg says: "The per capita sugar consumption in the U.S. has remained practically unchanged for the last 50 years."

The graph that Kellogg presents with this statement shows, accurately enough, that per-capita consumption of cane and beet sugar (both sucrose) has held fairly steady at some 90 to 100 pounds per year since 1920.

But a closer look at the graph also shows that per-capita consumption of all sugars, including corn sugar, has increased nearly 30 percent since 1920. The graph doesn't show that much of the sugar we now eat is added to food before we buy it—and in amounts unknown to the buyer.

The ad is Kellogg's slippery way of responding to the chorus of complaints about television commercials peddling highly sugared foods to children. Last year, several public interest groups, including the Committee on Children's Television and the California Society of Dentistry for Children, sued another cereal-maker, General Foods Corp., over commercials for what they call "candy breakfasts" sold as part of the company's Post Cereals line.

The lawsuit charges that General Foods "exploits trusting children in order to sell sugar concoctions as nutritious breakfast cereals." It alleges that the company, through the expenditure of approximately $1-billion in television advertising and marketing, has "induced the formation of lasting poor nutrition habits and tooth decay in millions of children, particularly youngsters from low-income families."

The suit, which asks General Foods to change its labeling and advertising and pay more than $1-billion in penalties, isn't the only problem manufacturers of sugared foods for children are facing. Two activist organizations, Action for Children's Television and Center for Science in the Public Interest, have separately petitioned the FTC to ban television commercials to children for candy and other sugary snack food. The Center's petition was supported by more than 10,000 physicians, dentists, dietitians, nutritionists, and health students.

The FTC is currently considering a number of proposals to crack down on advertising aimed at children. The result could be an outright ban on commercials for highly sugared products on children's programs, or else strict guidelines for those commercials and perhaps a requirement that broadcasters set aside time for counter-commercials. Any such proposal, however, is expected to face years of hearings and court challenges from industry.

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G. R. A. S. LIST OF FOOD ADDITIVES

ANTICAKING AGENTS
- Aluminum calcium silicate
- Calcium silicate
- Magnesium silicate
- Sodium aluminosilicate
- Sodium calcium aluminosilicate
- Tricalcium silicate

CHEMICAL PRESERVATIVES
- Ascorbic acid
- Ascorbyl palmitate
- Benzoic acid
- Butylated hydroxyanisole
- Butylated hydroxytoluene
- Calcium ascorbate
- Calcium propionate
- Calcium sorbate
- Caprylic acid
- Dilauryl thiodipropionate
- Erythorbic acid
- Gum guaiac
- Methylparaben
- Potassium bisulfite
- Potassium metabisulfite
- Potassium sorbate
- Propionic acid
- Propyl gallate
- Propylparaben
- Sodium ascorbate
- Sodium benzoate
- Sodium bisulfite
- Sodium metabisulfite
- Sodium propionate
- Sodium sorbate
- Sodium sulfite
- Sorbic acid
- Stannous chloride
- Sulfur dioxide
- Thiodipropionic acid
- Tocopherols

EMULSIFYING AGENTS
- Cholic acid
- Desoxycholic acid
- Diacetyl tartaric acid esters of mono- and diglycerides
- Glycocholic acid
- Mono- and diglycerides
- Monosodium phosphate derivatives of above
- Propylene glycol
- Ox bile extract
- Taurocholic acid

NUTRIENTS AND DIETARY SUPPLEMENTS
- Alanine
- Arginine
- Ascorbic acid
- Aspartic acid
- Biotin
- Calcium carbonate
- Calcium citrate
- Calcium glycerophosphate
- Calcium oxide
- Calcium pantothenate
- Calcium phosphate
- Calcium pyrophosphate
- Calcium sulfate
- Carotene
- Choline bitartrate
- Choline chloride
- Copper gluconate
- Cuprous iodide
- Cysteine
- Cystine
- Ferric phosphate
- Ferric pyrophosphate
- Ferric sodium pyrophosphate
- Ferrous gluconate
- Ferrous lactate
- Ferrous sulfate
- Glycine
- Histidine
- Inositol
- Iron, reduced
- Isoleucine
- Leucine
- Linoleic acid
- Lysine
- Magnesium oxide
- Magnesium phosphate
- Magnesium sulfate
- Manganese chloride
- Manganese citrate
- Manganese gluconate
- Manganese glycerophosphate
- Manganese hypophosphite
- Manganese sulfate
- Manganous oxide
- Mannitol
- Methionine
- Methionine hydroxy analogue
- Niacin
- Niacinamide
- D-pantothenyl alcohol
- Phenylalanine
- Potassium chloride
- Potassium glycerophosphate
- Potassium iodide
- Proline
- Pyridoxine hydrochloride
- Riboflavin
- Riboflavin-5-phosphate
- Serine
- Sodium pantothenate
- Sodium phosphate
- Sorbitol
- Thiamine hydrochloride
- Thiamine mononitrate
- Threonine
- Tocopherols
- Tocopherol acetate
- Tryptophane
- Tyrosine
- Valine
- Vitamin A
- Vitamin A acetate
- Vitamin A palmitate
- Vitamin B_{12}
- Vitamin D_2
- Vitamin D_3
- Zinc sulfate
- Zinc gluconate
- Zinc chloride
- Zinc oxide
- Zinc stearate

SEQUESTRANTS
- Calcium acetate
- Calcium chloride
- Calcium citrate
- Calcium diacetate
- Calcium gluconate
- Calcium hexametaphosphate
- Calcium phosphate, monobasic
- Calcium phytate
- Citric acid
- Dipotassium phosphate
- Disodium phosphate
- Isopropyl citrate
- Monoisopropyl citrate
- Potassium citrate
- Sodium acid phosphate
- Sodium citrate
- Sodium diacetate
- Sodium gluconate
- Sodium hexametaphosphate
- Sodium metaphosphate
- Sodium phosphate
- Sodium potassium tartrate
- Sodium pyrophosphate
- Sodium pyrophosphate, tetra
- Sodium tartrate
- Sodium thiosulfate
- Sodium tripolyphosphate
- Stearyl citrate
- Tartaric acid

STABILIZERS
- Acacia (gum arabic)
- Agar-agar
- Ammonium alginate
- Calcium alginate
- Carob bean gum
- Chondrus extract
- Ghatti gum
- Guar gum
- Potassium alginate
- Sodium alginate
- Sterculia (or karaya) gum
- Tragacanth

MISCELLANEOUS ADDITIVES
- Acetic acid
- Adipic acid
- Aluminum ammonium sulfate
- Aluminum potassium sulfate
- Aluminum sodium sulfate
- Aluminum sulfate
- Ammonium bicarbonate
- Ammonium carbonate
- Ammonium hydroxide
- Ammonium phosphate
- Ammonium sulfate
- Beeswax
- Bentonite
- Butane
- Caffeine
- Calcium carbonate
- Calcium chloride
- Calcium citrate
- Calcium gluconate
- Calcium hydroxide
- Calcium lactate
- Calcium oxide
- Calcium phosphate
- Caramel
- Carbon dioxide
- Carnauba wax
- Citric acid
- Dextrans
- Ethyl formate
- Glutamic acid
- Glutamic acid hydrochloride
- Glycerin
- Glyceryl monostearate
- Helium
- Hydrochloric acid
- Hydrogen peroxide
- Lactic acid
- Lecithin
- Magnesium carbonate
- Magnesium hydroxide
- Magnesium oxide
- Magnesium stearate
- Malic acid
- Methylcellulose
- Monoammonium glutamate
- Monopotassium glutamate
- Nitrogen
- Nitrous oxide
- Papain
- Phosphoric acid
- Potassium acid tartrate
- Potassium bicarbonate
- Potassium carbonate
- Potassium citrate
- Potassium hydroxide
- Potassium sulfate
- Propane
- Propylene glycol
- Rennet
- Silica aerogel
- Sodium acetate
- Sodium acid pyrophosphate
- Sodium aluminum phosphate
- Sodium bicarbonate
- Sodium carbonate
- Sodium citrate
- Sodium carboxymethylcellulose
- Sodium caseinate
- Sodium citrate
- Sodium hydroxide
- Sodium pectinate
- Sodium phosphate
- Sodium potassium tartrate
- Sodium sesquicarbonate
- Sodium tripolyphosphate
- Succinic acid
- Sulfuric acid
- Tartaric acid
- Triacetin
- Triethyl citrate

SYNTHETIC FLAVORING SUBSTANCES
- Acetaldehyde
- Acetoin
- Aconitic acid
- Anethole
- Benzaldehyde
- *N*-butyric acid
- *d*- or *l*-carvone
- Cinnamaldehyde
- Citral
- Decanal
- Diacetyl
- Ethyl acetate
- Ethyl butyrate
- Ethyl vanillin
- Eugenol
- Geraniol
- Geranyl acetate
- Glycerol tributyrate
- Limonene
- Linalool
- Linalyl acetate
- *l*-malic acid
- Methyl anthranilate
- 3-Methyl-3-phenyl glycidic acid ethyl ester
- Piperonal
- Vanillin

GROUP OF ADDITIVES included in the U.S. Food and Drug Administration's list of additives "generally recognized as safe" is given, except for large groups of natural flavors and oils. To be on this list an additive must have been in use before 1958 and have met certain specifications of safety. Additives brought into ... since 1958 must be approved individually. Occasionally substances are removed from the list by the FDA in the light of new evidence ... recent examples include the cyclamate sweeteners and ...

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NUTRITION LABELING

Something new is being added to food labels.

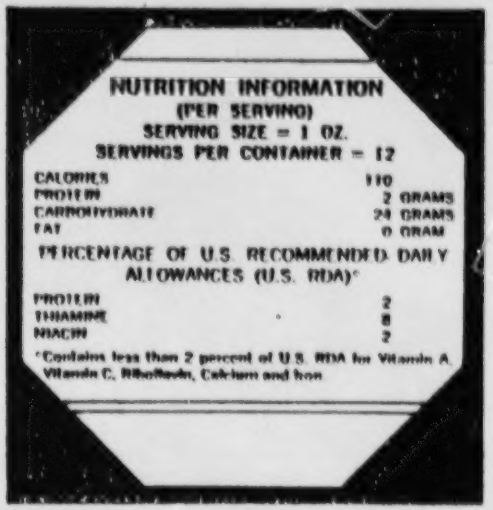
Many food processors are putting nutrition information on their food labels. By 1975, all fortified foods, and all foods for which a nutrition claim is made, must display nutrition information on the labels.

In addition to the usual information, such as name, net weight and ingredients, the new label will tell you what nutritional value is in the food. Information will be provided on the following:

Calories
Protein
Carbohydrate
Fat
Vitamin A
Vitamin C
Thiamine
Riboflavin
Niacin
Calcium
Iron

The labels at the right are examples of what you should look for in your store.

Nutrition information must appear in a standard format and, unless space does not permit, always on the part of the label immediately to the right of the main panel. Having the nutrients always listed in the same order and location makes it easier for you to compare labels.



NUTRITION INFORMATION
(PER SERVING)
SERVING SIZE = 1 OZ.
SERVINGS PER CONTAINER = 12

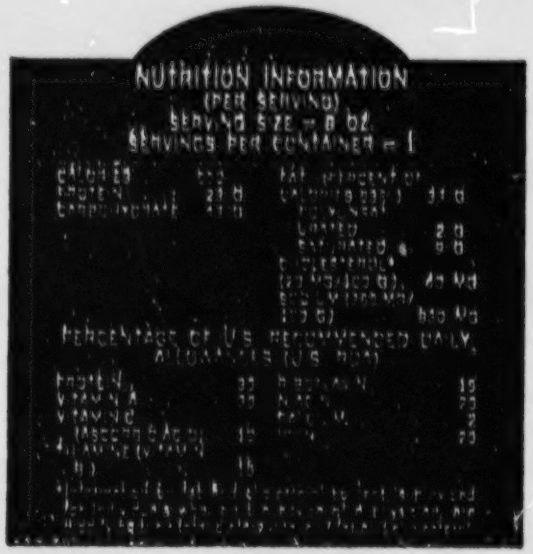
CALORIES	110
PROTEIN	2 GRAMS
CARBOHYDRATE	24 GRAMS
FAT	0 GRAM

PERCENTAGE OF U.S. RECOMMENDED DAILY ALLOWANCES (U.S. RDA)*

PROTEIN	2
THIAMINE	8
NIACIN	2

*Contains less than 2 percent of U.S. RDA for Vitamin A, Vitamin C, Riboflavin, Calcium and Iron

This is the minimum information that must appear on a nutrition label.



NUTRITION INFORMATION
(PER SERVING)

A label may include optional listings for cholesterol, fats, and sodium.

HOW TO READ NUTRITION LABELS

Nutrition information is per serving. The label gives the size of a serving (for example, one cup, two ounces, 1 tablespoon) and tells how many servings are in the container.

Then calories are listed, followed by the amounts in grams of protein, carbohydrate and fat.

Protein is listed twice, in grams and as a percentage of the U.S. Recommended Daily Allowance.

Seven vitamins and minerals must be shown, in the same order, on all nutrition labels.

Other vitamins and minerals may also be listed.

Listing of cholesterol, fatty acid, and sodium content is optional.

A KEY TO METRIC UNITS

Nutrition labels show amounts in grams rather than ounces, because grams are a smaller unit of measurement, and many food components are present in small amounts. Here is a guide to help you read nutrition labels:

1 pound = 454 grams (g)
1 ounce = 28 grams (g)
1 gram = 1,000 milligrams (mg)
1 milligram = 1,000 micrograms (mcg)

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WHAT DOES RDA MEAN?

U.S. Recommended Daily Allowances (U.S. RDA) are the amounts of protein, vitamins and minerals that an adult should eat every day to keep healthy.

Nutrition labels list the U.S. RDA by percentage. To make sure you get enough vitamins and minerals, the percentages for each from different kinds of food should add up to about 100 each day.

U.S. Recommended Daily Allowances (U.S. RDA)

Protein	
Protein quality equal to or greater than casein	**45 grams**
Protein quality less than casein	**65 grams**
Vitamin A	**5,000 International Units**
Vitamin C (ascorbic acid)	**60 milligrams**
Thiamine (vitamin B_1)	**1.5 milligrams**
Riboflavin (vitamin B_2)	**1.7 milligrams**
Niacin	**20 milligrams**
Calcium	**1.0 gram**
Iron	**18 milligrams**
Vitamin D	400 International Units
Vitamin E	30 International Units
Vitamin B_6	2.0 milligrams
Folic acid (folacin)	0.4 milligram
Vitamin B_{12}	6 micrograms
Phosphorus	1.0 gram
Iodine	150 micrograms
Magnesium	400 milligrams
Zinc	15 milligrams
Copper	2 milligrams
Biotin	0.3 milligram
Pantothenic acid	10 milligrams

The nutrients in bold type *must* appear on nutrition labels. The other nutrients *may* appear.

HOW TO USE NUTRITION LABELS

You can use nutrition labels in many ways:

- To plan more nutritious meals for you and your family.
- To get more nutrition for your food dollar by comparing the nutrition values of different brands and foods.
- To select food for special diets recommended by physicians, such as for low sodium or low cholesterol.
- To count calories.
- To compare new foods with familiar ones.

FDA AND NUTRITION LABELS

Nutrition labeling is a program developed by the Food and Drug Administration. It is required for some foods and optional for others.

In response to consumer requests, nutrition labeling was developed to provide you with more information on the food you eat.

FDA
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Food and Drug Administration
5600 Fishers Lane
Rockville, Md. 20852
DHEW Publication No. (FDA) 74-2030

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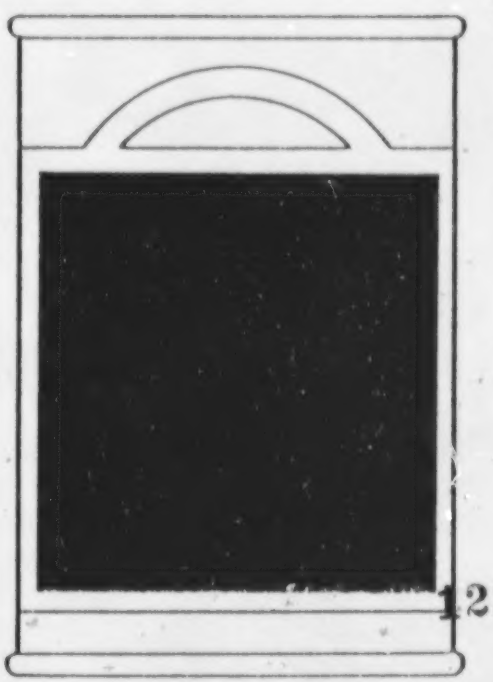
We want you to know about

nutrition labels on food



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A PRIMER ON FOOD ADDITIVES

by G. Edward Damon

Consumers today are very concerned about what's going into their food. This primer on food additives describes what they do and why modern food technology has made them necessary, and recounts how the Congress and the Federal Government have responded to consumer demands for tight controls.

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A Primer On Food Additives

"I aimed at the public's heart and by accident I hit it in the stomach."

These words were written by Upton Sinclair after spending many months with the mid-European immigrants who found work, and mistreatment, in Chicago's packing houses at the turn of the century. His book, "The Jungle," revealed that dangerous filth accompanied the production of meat and meat products and that plant owners were callous toward the welfare of their workers.

The book disgusted and angered its readers. Their loud reactions became a powerful, moving force that helped persuade Congress to pass the Pure Food and Drugs Act of 1906 as well as the Meat Inspection Act of the same year.

The First Food Revolution

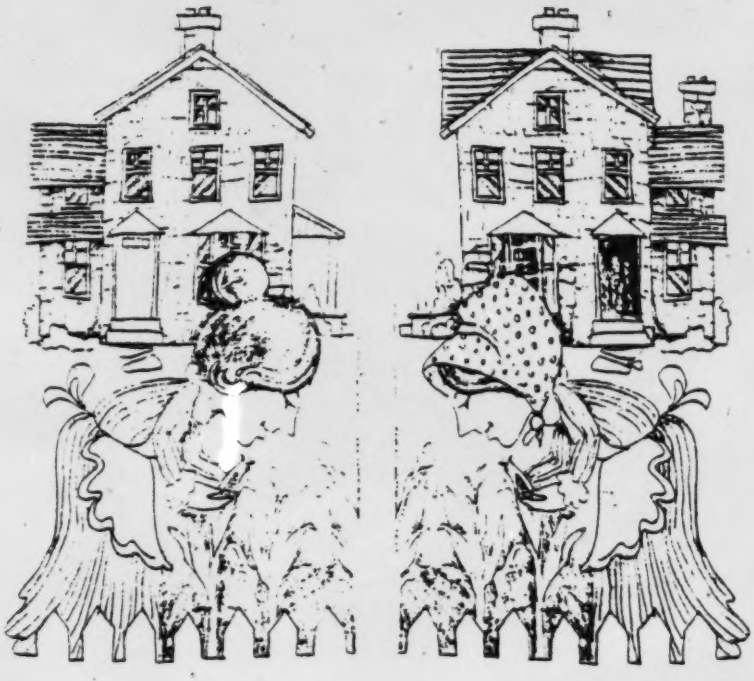
Today's hindsight may find no excuses for legislators who were slow to act to protect consumers against impure foods, but some reasons could be advanced: Before the Civil War people raised most of what they ate and processed it themselves, and food additives were limited mostly to home-grown colorings and substances needed for preservation in storage—vegetable and fruit juices, salt, spices, smoke.

Our system of food supply changed after this war. Thousands of rural people flocked to the cities to work in factories; they now needed food grown and preserved by someone else. Manufacturers of food products sprang up almost everywhere.

Food purity as such was not a major consideration. Cheap and handy methods of preserving foods were important to profits, and scientific knowledge of food chemistry was practically nonexistent.

Dangerous adulteration of foods was commonplace. Chemicals to keep products looking good until they reached the consumer or just to hide the smell and look of spoilage were used without much restraint.

The problem of food additives was especially acute. Supplying the rapidly growing urban population required constantly expanding facilities, and speed of production took precedence over both quality and safety. For example, copper sulphate, a powerful emetic also known as blue vitriol, was added to canned vegetables to give them that fresh, green look, and salicylic acid, borax and formaldehyde were used generously—and carelessly.



"Before the Civil War people raised most of what they ate and processed it themselves."

Along Came Wiley

The strong leadership of one man finally made food and drug protection an operating function of the Federal Government. Dr. Harvey Washington Wiley, chief chemist for the U.S. Department of Agriculture in Washington, D.C., said publicly that the American people were being steadily poisoned by the dangerous chemicals that were being added to food with reckless abandon.

To dramatize the problem, and to learn more about the reactions of the human body to ingestion of these chemicals, he formed, in 1902, what became known as "Dr. Wiley's Poison Squad." Twelve young healthy men, recruited from the Department of Agriculture, pledged to eat nothing except what Dr. Wiley prescribed.

Dr. Wiley explained later: "I wanted young, robust fellows, with a maximum resistance to deleterious effects of adulterated foods. If they should show signs of injury after they were fed with such substances for a period of time, the deduction would naturally follow that children and older persons, more susceptible than they, would be greater sufferers from similar causes."

Over a period of five years, Poison Squad members were fed measured doses of many kinds of commonly-used food additives. Dr. Wiley was not only concerned about determining the effects of these additives, he was also interested in stirring up the public about the need for a pure food law. His dual efforts were highly successful.

President Theodore Roosevelt signed the Food and Drugs Act into

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law on June 30, 1906, and enforcement of the Act began January 1, 1907.

Factory conditions began to improve. Now that there *was* a law, complete with inspections and penalties for convicted transgressors, the food additive situation began to change, as did attitudes toward sanitation. The 1906 law defined as adulterated foods containing "any added poisonous or other added deleterious ingredient which may render such article injurious to health." Many toxic materials were kept out of the food supply by this law but it failed to work in the case of pesticide residues.

Pesticides were necessary, but there was no legal authority to determine and set safe tolerances for residues. Lead arsenate, used in those days for the coddling moth on apples, was a major problem. Efforts to enforce an informal FDA tolerance led to hundreds of seizures, but caused great opposition from the apple growers who sought help from their Congressmen.

"American consumers are protected by the most stringent food laws in the world."

Under the 1906 Act the Government had to prove in each case that the residues present would be injurious—a difficult burden. And when funds for research on the toxicity of sprays were cut off, FDA was forced to discontinue the program.

During the quarter century after 1906, great changes were taking place in food technology. Stronger controls were needed—compulsory inspections of food plants, for example.

Under the 1906 Act, inspectors could enter a plant only if allowed to do so by plant management. Penalties were too light to bring about significant changes in sanitation and labeling practices, and official standards were urgently needed to define the composition of basic food products. The deficiencies of the original Act were becoming increasingly evident.

President Franklin D. Roosevelt gave new backing in 1933 to the reforms the Food and Drug officials had been calling for. After five years of trying, the 1938 Food, Drug, and Cosmetic Act was passed. It stands today, amended many times as changing conditions have been brought to the attention of Congress.

Sufficient power to insure safe use of pesticides was one of the most pressing needs for the stronger Act of 1938. The new law prohibited the addition of poisonous or deleterious substances to food, but provided for exemptions and safe tolerances for substances that were necessary in production or unavoidable. It did not require any showing to the FDA that such substances were safe before they were introduced into the food supply.

FDA attempted to set a tolerance for a necessary pesticide, but after protracted hearings and an adverse court decision it became clear that the procedure required by the 1938 Act also was unworkable.

By this time FDA's problem with chemicals in foods had become unmanageable. Literally thousands of new compounds were being used in crop production, food processing and packaging. Some were so acutely toxic as to require emergency action by FDA. Such cases were relatively simple; it was no great problem to prove in court that they were harmful. The big problem was the host of substances which had not been sufficiently tested to show that they were safe.

The total situation so concerned FDA's Commissioner Charles W. Crawford that he decided to discuss it with the late Congressman Frank B. Keefe of Wisconsin, a strong advocate of pure foods.

On May 9, 1949, Mr. Keefe introduced a resolution calling for a special committee to investigate the use of chemicals in foods. Death ended the career of Congressman Keefe, and Representative James J. Delaney of New York was named chairman of the investigating committee. The "Delaney Hearings" became the platform for a long parade of scientific, legal, agricultural and medical experts who gave their advice on how the chemicals-in-food problem should be handled.

Early in the deliberations it became clear that "chemicals in foods" would have to be regulated in at least two separate categories—pesticides, which were used on raw agricultural commodities, and "food additives," which were substances added to improve food products or to facilitate processing or packaging.

The Pesticide Chemicals Act became law in 1954, the Food Additives Amendment was approved in 1958, and the Color Additive Amendments in 1960. In all these laws, the intention of Congress was not to ban the use of food chemicals but to insure their safety when properly used. All these laws put upon industry the responsibility to prove by scientific research acceptable to the FDA that the substances would be safe as used.

Three basic definitions will help explain the provisions of the 1958 law:

1. Food additives are components of food. They can be added directly to the food or get into the food from its surroundings, its packaging, the

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machinery used, or from any other source.

The law goes even further: If there is a possibility or "reasonable expectation" of a material becoming a food component when used in a particular manner, then it must be considered a food additive.

2. Other ingredients added to food, while considered as food additives in laymen's terms, are not *legally* classed as food additives.

Certain substances added to food, which qualified scientists generally recognized as safe under the conditions of their intended use, are not "food additives," and are exempt from the premarketing clearance requirements. This classification of "generally recognized as safe" (GRAS) may be made either on the basis of data derived from scientific procedure or, in the case of substances in use prior to January 1, 1958, on the basis of experience drawn from common and safe use in food.

Thus, the term "food additive" or the term "GRAS substance" is not limited to the artificial or synthetic chemicals that people so often associate with it. "Food additives" or "GRAS substances" include *all* raw agricultural products as well as components of fabricated foods.

It is easy to wonder how a substance, commonly known as "food," such as a potato or a carrot, for example, could also be considered a "food additive" or a "GRAS substance." If they are used as components of a food, however, they fall in one of these two classifications under the Food, Drug, and Cosmetic Act.

A good example of this might be vegetable soup. The raw agricultural products would be classed as "GRAS substances," while other possible ingredients would either have to be classified as "GRAS" or be subject to a food additive regulation.

The reasoning for the two classifications is fundamental. There is nothing about a natural product that is inherently more safe than a synthetic product. Many synthetic products are simply chemical counterparts of natural products. To say that natural products as such are safer or more desirable than synthetic products is to make a statement that is just not so.

Shortly after the enactment of the 1958 Amendment, FDA published a list of GRAS substances as part of its regulations. As of June 30, 1972, approximately 560 substances for direct use in food for humans, 108 substances for use in food packaging, and 46 compounds for adding trace minerals to animal foods were listed as GRAS.

3. The Delaney Clause is also a part of the 1958 Amendments. Sponsored by Congressman Delaney (D-NY), the clause requires that no food additive can be approved if the additive is found to induce cancer when ingested by man or animal.

This clause is binding on Government agencies and food manufacturers alike, regardless of the *amount* of the additive planned to be consumed over the lifetime of either man or animal. The enactment of this clause was an expression by the Congress about the degree of risk to cancer to which the public could be exposed; as far as the Congress was concerned, *no* degree of risk was acceptable.

In vegetable soup, "the raw agricultural products would be classed as 'GRAS substances'."

How Are Food Additives Approved?

The requirements for approving food additives are not as complicated as they sound.

Any substance newly proposed for addition to food must undergo strict testing. Information must be presented to FDA showing the identity of the new additive, its chemical composition, how it is manufactured, and the methods to be used to detect and measure its presence in the food supply at the levels of expected use. Data must establish that the proposed testing methods are of sufficient sensitivity to determine compliance with the regulations.

There must also be data establishing that the additive will accomplish the intended physical or technical effect in the food, and that the amount proposed is no higher than that reasonably necessary to accomplish this effect.

Finally, data must be provided establishing that the additive is safe for its intended use. This requires scientific evidence ordinarily obtained from feeding studies and other tests using the proposed additive at various levels in the diets of two or more species of animals.

Can You Really Test for Safety?

In a very real sense, you cannot test for safety: you can only test for the presence of known hazards. If the hazards are not found, the additive

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"A typical testing sequence involves at least two animal species and often more."

is assumed to be safe. If someone discovers a new hazard, the testing must be done again.

This pattern has been repeated many times in FDA's history as scientific knowledge increases. Of course, a new food additive cannot be legally used unless, in addition to being safe, it will accomplish some intended effect in the production, manufacture, or storage of the food.

How Safe Is Safe?

Testing food additives to determine their degree of hazard, or safety, obviously cannot be done with humans as the primary testing agents. The young men who made up Dr. Wiley's Poison Squad would today be required to sample additives numbering in the thousands, and today's standards of measurement accuracy, plus our modern concepts of human safety, would make the earlier approach unacceptable; we no longer allow human subjects to be used for such tests.

A typical testing sequence involves at least two animal species and often more. FDA realizes that no animal reacts exactly like man and that a multiple-species testing program, often running through two generations or more, is far more productive of dependable results than is the testing of one species alone for a brief time.

Even this careful testing is not considered enough. FDA uses a measuring stick which might be called the philosophy of the minimum. These are the essential factors:

- A tolerance or limitation will not exceed the smallest amount needed, even though a higher tolerance may be safe.
- After determining the maximum amount that will not produce any undesirable effect on the test animals used, 1/100th of that amount is normally the maximum allowed for use by man. Of course, man might react differently from the test animals; when we know something from human experience or human studies, it is possible that a smaller safety factor than 1/100th can be used. On the other hand, if it is proved that even a smaller amount than 1/100th will do the job, that smaller amount will be used instead.
- It is quite human to think of desired safety—in anything—in the realm of 100 percent only. Such "perfection" is literally impossible. It helps here to realize that the risks are minute and the benefits, more often than not, are highly desirable and in many cases essential for the maintenance of an adequate, nutritious and safe food supply.

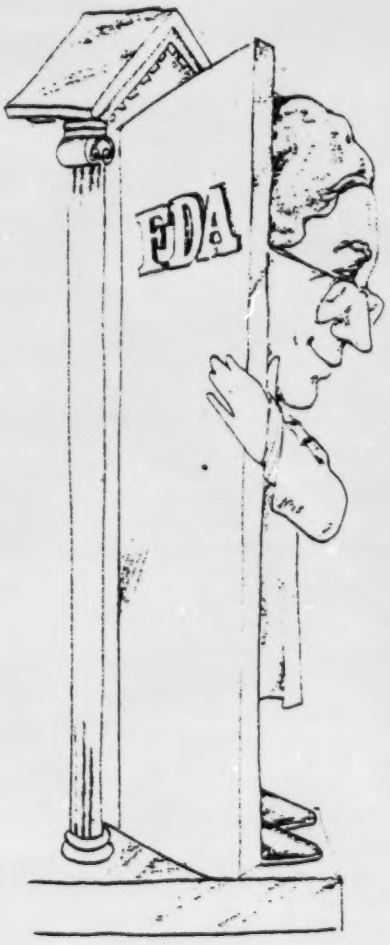
Just How Much Is Allowed?

A logical compromise between normal concern and test results seems to lie with the question, "How Much?" After all, we need salt in our diet, but we could die from eating too much salt.

FDA allows food additives to be used only if there is a practical certainty that no harm will result from their normal, allowed use over a lifetime.

The permitted amounts of additives vary depending on the kind of food, the safety limits of the additive, and the least amount needed to accomplish the desired result. FDA laboratories can measure these in amounts so small that they are commonly expressed in parts per million, and sometimes parts per trillion.

"Information must be presented to FDA showing . . . that the additive will accomplish the intended effect in the food, and that the amount proposed is no higher than that reasonably necessary to accomplish this effect."



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To relate these minute amounts to something more easily understood, let's take two commonly used additives. BHA and BHT are frequently listed on labels of baked goods, cereals, and other foods using oils and fats in their manufacture. Their complete names are butylated hydroxyanisole and butylated hydroxytoluene, which not only take up a lot of space on a small food label, but might frighten anyone who is not a chemist.

BHA and BHT are preservatives and antioxidants—without them, many foods would turn rancid in a short time. In the average American diet both BHA and BHT are consumed in amounts slightly less than 4 ppm—four parts per million.

This proportion may be easier to grasp if you consider:

- 4 ppm equals one-eighth of one ounce for each ton of food.
- A large needle in a 1-ton haystack could be 4 ppm by weight.
- 4 ppm in all the food a person might eat in a normal lifetime would equal about four mouthfuls.
- Parts per trillion? This is more difficult to describe. If you filled an olympic-size swimming pool with iced tea and dropped *one grain* of sugar into the pool—and stirred the mixture thoroughly—you might have one part per trillion. And an FDA scientist could determine just how much sweetening you used.

Can We Get Along Without Additives?

We can get along without food additives, but not as well. Were it not for food additives, we would have to go back to the old concept of bakery freshness—good today, stale tomorrow.

Many of us remember when the cottage cheese separated, cookies dried up in two days, any food with fat or oil in it became rancid, canned vegetables and fruits were soft and mushy, and marshmallows got too hard to toast. Without additives the variety and quality of foods would return to those familiar to grandmother.

The quantities available would definitely be less, and convenience foods would be nonexistent. FDA believes that its work assures the safe use of food additives.

Those "Poisonouschemicals"

Some people have expressed their feelings by coining a term that doesn't actually exist, "poisonouschemicals." If all chemicals are poisonous, then people should stop eating, because all foods are chemicals. Some familiar additives are pure chemicals, such as the potassium iodide in table salt and many familiar vitamins—all essential to man's health.

Expressing foods in chemical terms can be a lengthy job. For example, milk is made of water, 12 fats, 6 proteins, lactose (milk sugar), 9 salts, 7 acids, 3 pigments, 7 enzymes, 18 vitamins, 6 nitrogenous compounds and 3 gases —and the chemical names of these would take another page, at least. Milk is a formidable chemical, but hardly poisonous to most Americans.

Where Do Food Additives Come From?

Many allowable food additives are derived directly from food itself. For example, lecithin is found in all living organisms, both plant and animal. It is obtained primarily from soybeans and is used mostly as an emulsifier to keep ingredients in a processed food from separating.

A large number of laboratory-created additives are also found naturally in foods. Calcium and sodium propionate, for example, are produced during fermentation in the production of Swiss cheese. The propionates are mold inhibitors, used primarily in baked goods. The vitamins used to improve the nutritive value of many foods are identical to the vitamins found naturally in food.

Actually, all additives are chemicals, regardless of their source, and the body does not distinguish between them.

The cost of an additive usually adds "next to nothing" to the final cost of a food. For example, enough calcium propionate to help protect 1,000 loaves of bread from becoming moldy costs less than ten cents.

Incidentally

In addition to the intentional additives you have been reading about, there are also *incidental* additives, which have no planned function in food, but become a part of it during some phase of processing, packaging or storing.

Good examples are substances that might migrate from a packaging material to the food. The safety of incidental additives is scientifically controlled by FDA to the same high degree as are the intentional additives.

The Many Uses

A food additive must be of some

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benefit to a food or its production. Some additives are regulated with a specific group in mind—children, say, or diabetics.

Nutrient supplements are the vitamins and minerals added to foods to improve nutritive value and sometimes to replace those that are lost during processing, as in enriched bread. Vitamins A and D are added to margarine and vitamin D to milk. Potassium iodide is added to salt to furnish the iodine necessary to prevent simple goiter.

Nonnutritive sweeteners are the sugar substitutes.

Preservatives. There are many kinds, some effective for a particular type of food or against a particular spoilage organism. They are called antioxidants, inhibitors, fungicides, and sequestrants.

Emulsifiers improve the uniformity, fineness of grain, smoothness and body of such foods as bakery goods, ice cream and confectionery products.

Stabilizers and thickeners give that desired smoothness of texture and uniformity of color and flavor to confectioneries, ice creams and other frozen desserts, chocolate milk and artificially sweetened beverages. Commonly used are pectins, vegetable gums and gelatins.

Flavors and flavoring agents represent our largest group of food additives. We are familiar with many, including the spices and liquid derivatives of onion, garlic, cloves and peppermint.

Some agents enhance flavor, such as monosodium glutamate, made from corn. Our natural flavor sources, however, have not been enough to satisfy our flavor demands for at least the past 80 years. To meet the demands, industry has developed synthetic flavorings which not only resemble accurately natural flavor but have the advantage of stability.

Many artificial flavors cannot be told from the natural ones, and many added flavors are derived from natural sources, such as amyl acetate—banana flavor extracted from bananas, and methyl salicylate —oil of wintergreen from the leaves of the wintergreen plant.

From FDA's standpoint, "protection of the American consumer has always been dominant."

Bleaching agents and maturing agents speed up the aging process which improves the breadmaking quality of flour. Freshly milled flour is yellowish in color and makes very poor bread.

Colors are considered highly important although they do not improve eating qualities. We are so used to a certain color in a specific food that we would refuse to buy and eat it if some other color was present, or the expected color was too pale to look "healthy."

Additives have many other uses, including hardening, drying, leavening, anti-foaming, firming, crisping, anti-sticking, whipping, creaming, clarifying, and sterilizing.

Without these many aids to food processing, today's grocery stores would need a lot less room to sell what foods would be left.

The Job Is Never Done

Food additives are a part of today's modern food technology. The first impetus for Federal control involved Dr. Wiley and his Poison Squad. The second strong push came during and after World War II, when hundreds of new chemicals were suddenly tried and then used to protect and enhance food, particularly for military purposes. Some of these were subsequently taken off the market when there was time for adequate testing with newer machines and techniques for detection and measurement.

Today, there are thousands of tested and approved food additives. Many are approved only for certain products and in exact amounts. New techniques and improved machinery keep pace with new additives which, if approved by FDA, will further improve our food supply.

Food technology came first; then came Federal regulation. The path from the original USDA's Bureau of Chemistry to FDA's Bureau of Foods has been long and full of technical, legal and scientific changes. Its general direction, however, has never varied: protection of the American consumer has always been dominant.

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FDA CONSUMER
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R. D. A. vs. U. S. R. D. A.

WHAT ARE THE RDA?

The Recommended Dietary Allowances are the levels of intake of essential nutrients considered, in the judgment of the Food and Nutrition Board on the basis of available scientific knowledge, to be adequate to meet the known nutritional needs of practically all healthy persons.

These Allowances do not, then, represent average needs. Individual needs for various nutrients may vary significantly. The RDA are high enough to meet the highest normal needs of normally healthy people, but they do not represent ideal levels. Further, they do not take into account therapeutic nutrient needs--special needs caused by metabolic disorders, illnesses or other conditions requiring special diets or therapeutic supplements.

WHAT'S THE DIFFERENCE BETWEEN USRDA AND RDA?

The United States Recommended Daily Allowances were proposed by the FDA for use in nutritional labeling. These are not the same as the Recommended Dietary Allowances, although they were derived from RDA figures.

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RESOURCES FOR THE CONSUMER
Food Safety, Food Additives, Nutrition Labeling

Nutrition Professionals

Public Health Department - Nutritionist
Food and Drug Administration
Agricultural Extension Home Economist
Hospital Dietitian
Community or State College

Books

Whelan, Elizabeth M and Stare, F.J. Panic In The Pantry: Food Facts, Fads, and Fallacies, New York, Atheneum Pub., 1975,(231 pp $8.95)

Reprints and Pamphlets (Single copies free of charge)

* "Read The Label, Set a Better Table" DHEW Pub. No. (FDA) 76-2049
"See The Fact's About the Food You Eat", Jan 1975, Cereal Institute, Inc.
* "We Want You to Know About Nutrition Labels or Food", DHEW Pub. No. (FDA) 74-2039
"Food Additives, What They Are/How They Are Used" Manufacturing Chemists Assoc, 1825 Connecticut Ave. N.W., Washington, D.C. 20009
* "Primer on Food Additives", DHEW Pub. No. (FDA) 74-2002
* "Food Additives and Hyperactive Children", DHEW Pub. No. (FDA) 77-2080
* "Some Questions and Answers about Food Additives" DHEW Pub. No. (FDA) 78-2094
"Additives and Our Food Heritage" Kraft Co. Corporation (H5-8154) Chicago, Ill.
* The Saccharin Ban" DHEW Pub. No. (FDA) 77-2079
"Today's Food and Additives", P.O. Box 6095, Kankakee, Ill. 60901

* Order from: U.S. Dept. Health, Education and Welfare; Public Health Service; Food and Drug Administration, 5600 Fishers Lane, Rockville, Md. 20857

Posters Chemical Cuisine, Center for Science in the Public Interest $1.50

Magazine Articles

"The Great Saccharin Snafu" Consumer Reports, July, 1977
Kermode, G.O., "Food Additives", Scientific American, March, 1972
Mayer, J., "The Saccharin Ban: Weighing the Risks" Family Health, July 1977

BEANS
PEAS AND
LENTILS

HIGH PROTEIN

LOW-COST RECIPES

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Puerto Rican Rice And Pigeon Peas

Serves 6-8

Soak, then cook until tender:
- ½ lb. pigeon peas, pinto or kidney beans
- 4 c. water

Brown in dutch oven or deep skillet:
- 1 lb. pork ribs or cooking ham, cut in 1" pieces

Measure accumulated drippings and add enough vegetable oil to make ½ c. Return fat to skillet and add:
- achiote, if available, OR
- ¾ c. tomato paste

Stir to coat meat.
Add to skillet:
- 2 tomatoes, chopped
- ½ green pepper, chopped
- 1 large onion, chopped
- 2 cloves garlic, minced
- 2 c. cabbage, finely chopped
- 1 t. oregano
- 1 T. capers with juice
- 1 T. salt

Stir-fry briefly just to wilt vegetables.
Add:
- 2 c. uncooked rice
- cooked pigeon peas, drained

Stir well. Add:
- 6-7 c. bean liquid and water

Cook at moderate heat 15 minutes. Stir once or twice. Then reduce heat, cover, and finish cooking slowly until rice is done.

Option:

Omit meat. Begin by sauteeing vegetables in ½ c. fat, then add tomato paste and remaining ingredients.

Musozya: Soak overnight in large kettle equal parts hominy, dried beans, and raw peanuts. Bring to boil, salt, and simmer 2 hours. Serve with fresh vegetables for a satisfying African meal. (Complementary protein.)

Good spread with margarine and toasted under the broiler. Consider it a high source of protein at 9.5 grams protein per slice (10 slices per loaf).

Three-Grain Peanut Bread

Makes 1 loaf
325°
1 hr., 10 min.

Preheat oven to 325°.
Combine in mixing bowl:
- 1 c. white flour
- ½ c. quick cooking oats
- ½ c. yellow cornmeal
- ½ c. dry milk powder
- ½ c. sugar
- 3 t. baking powder
- 1 t. salt

Cut in:
- ½ c. cream-style peanut butter

Blend and pour in:
- 1 egg
- 1½ c. milk

Mix well. Turn into greased and floured 9x5" loaf pan. Spread batter evenly. Bake 1 hour and 10 minutes, or until cake tester inserted in center comes out clean. Cool 10 minutes and remove from pan.

Soy flour is expensive among flours, but not as a source of protein. One slice has 8 grams protein (10 slices per loaf.)

Soy-Banana Bread

Makes 1 loaf

Preheat oven to 350°
Sift together:
- 1 c. plus 2 T. soy flour
- 1½ c. white flour
- 2¼ t. baking powder
- ½ t. soda
- ¾ t. salt
- ½ c. sugar
- ½ c. dry milk powder

Cut into dry ingredients:
- ¼ c. shortening

Add and mix just until moistened:
- 1 egg, beaten
- ½ c. water
- 1 c. mashed bananas (2-3)
- ½ c. chopped nuts (optional)

Spread in greased 9x5x3" loaf pan. Bake 50 minutes. Remove loaf from pan to cool. Delicious warm or toasted.

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Basic Cooked Lentils

T·S

Serves 6

Bring to a boil and simmer 20 minutes:
- 1 c. lentils
- 2½ c. water
- 2 beef bouillon cubes
- 1 bay leaf
- 1 t. salt

Flavor options:

Curried Lentils
Sauté together:
- ¼ c. margarine
- 1 large onion, chopped
- 1 clove garlic, minced

Add:
- 1 t. salt
- 1-2 T. curry powder

Fry briefly. Add to Basic Cooked Lentils with:
- 2 T. lemon juice
- chopped parsley

Serve over rice.

Sweet-Sour Lentils
Reduce water by ½ c. in preparing Basic Cooked Lentils.
When lentils are cooked, add:
- ¼ c. apple or pineapple juice
- ¼ c. cider vinegar
- ¼ c. brown sugar
- 1 clove garlic, crushed
- ⅛ t. cloves
- sautéed onion, if desired

Heat to bubbly. Serve over rice.

Easy Lentil Stew
Add to lentils:
- ½ lb. diced ham, browned sausage, or browned ground beef
- ¾ c. tomato paste
- 2 c. water
- ¼ t. oregano
- 1 t. salt
- 1 onion, chopped
- 2 stalks celery, chopped
- 1 clove garlic, minced

Bring to a boil, reduce heat, and simme 20-30 minutes until vegetables are tender. Serve plain or over rice.

Skillet Beef With Lentils

T·S

Serves 6-8

Bring 1 qt. water to boil in saucepan.
Add:
- 1½ c. lentils, rinsed

Cook 20 minutes. Drain, reserving liquid.
In deep skillet, sauté:
- 2 T. margarine or butter
- 2 medium onions, chopped
- 1 clove garlic, minced

Stir in:
- 1 lb. ground beef

Brown well. Dissolve in 2½ c. reserved liquid:
- 2 beef bouillon cubes

Add liquid to meat mixture; cover and simmer 10 minutes.
Stir in:
- reserved lentils
- 2 T. long-grain rice
- 1 t. sugar
- 1 t. salt
- 1 t. ground cumin
- ½ t. pepper

Bring to boil, reduce heat, cover, and simmer 30 minutes, or until lentils and rice are tender and liquid is absorbed (add more liquid if necessary). Check seasonings and stir in:
- 1 T. cider vinegar

Top with parsley sprinkle.

Caribbean Rice And Beans

Serves 6-8

Soak overnight or by quick method:
- 2 c. dry pigeon peas, pinto beans, or kidney beans
- 6 c. water
- 1 T. salt

Bring to a boil, reduce heat, and simmer just until tender—about 40 minutes.
Drain beans, reserving liquid.
Heat in large covered skillet:
- 2 T. oil or margarine

Add:
- 1 clove garlic, crushed
- 2 green onions, chopped
- 1 large tomato, chopped
- 1 T. lime juice (optional)
- ⅛ t. ground cloves
- 1 T. chopped parsley
- ¼ t. pepper
- drained beans

Sauté about 5 minutes.
Add:
- 2 c. rice
- 4 c. reserved bean liquid (add water if necessary)

Bring to a boil, cover, reduce heat to simmer, and cook 20-25 minutes without stirring.

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Monterey Beans And Cheese

T·S

Serves 6

Fry, drain, and break into pieces:
- 2 slices bacon

Set aside. Sauté in bacon fat until tender:
- ½ medium-sized onion, sliced
- ½ green pepper, diced

Add:
- bacon bits
- 2 c. cooked kidney beans
- ¼-½ lb. shredded cheddar cheese
- 2 ripe tomatoes, diced, or ¾ c. tomato sauce
- ½ c. beef bouillon or tomato juice
- 1 t. chili powder
- ½ t. salt
- dash of pepper

Cook slowly, stirring constantly, until ingredients are blended and cheese is smooth—about 5 minutes. Serve with rice.

Mexican Refried Beans

Serves 5-6

Soak overnight or by quick method:
- 1 lb. dried pinto, pink, or kidney beans

Add:
- 6 c. water
- 2 onions, chopped (optional)

Bring to a boil, cover and simmer slowly until beans are tender, about 3 hours. Mash beans with potato masher.

Add:
- ½ c. hot bacon drippings, margarine, or lard
- salt to taste

Mix well; continue cooking, stirring frequently until beans are thickened and fat is absorbed. Serve at once or refrigerate for later use.

Options:

Cook beans with half the onion; heat fat in skillet, sauté remaining onion, then mash ¼ c. beans into skillet. Fry a short time and push to side, adding more beans by ¼ cupfuls and mashing. Simmer 10 minutes to finish.

Add chili powder and/or cumin and tomato sauce to taste. Place in greased casserole, sprinkle with cheese, and keep hot in oven until ready to serve.

Use soybeans or chick peas (garbonzos) for delicious variation.

Serve chili beans on rice or with corn bread for the grain-legume protein relationship.

Mexican Chili Beans

Serves 6

Soak overnight or by quick method:
- 1 lb. dried red kidney beans
- 2 qts. water

Bring to a boil.
Simmer just until tender, about 40 minutes.
Fry in Dutch oven:
- ¼ lb. salt pork, finely diced

When crisp, add:
- 2 c. onions, finely chopped
- 4 cloves garlic, finely chopped

Saute until golden. Add:
- 2 t. salt
- 1 t. pepper
- 2-4 t. chili powder, according to taste
- 1 t. dried leaf oregano
- ¼ t. cumin
- ¼ c. tomato paste
- 1 c. tomato sauce

Simmer 15 minutes.
Drain beans, reserving liquid. Add beans to tomato mixture along with 2 c. reserved liquid. Cover and simmer 1 hour.

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Soybean curd (tofu) is actually cheese made from soybean milk. A common food in Asia, it is available in North America only in Chinese groceries or health food stores. Contributor says, "This is a very flexible dish: use more meat and less bean curd at first and then gradually reverse it."

Soybean Curd Sauté

Serves 4

Sauté in skillet:
- 1 T. oil
- ¼ c. chopped onion
- 2 fresh red chili peppers, finely chopped (optional)

Add:
- ½ lb. fresh pork, sliced in small bite-sized pieces

Stir-fry until meat is browned.

Add:
- 4 cakes (4x4") bean curd, cut into bite-size pieces

Stir-fry briefly.

Add:
- 1 c. tomato sauce
- ½ c. tomato paste
- 2 T. soy sauce
- 2 T. vinegar
- 1-2 c. water (as needed for gravy-like consistency)
- 2 c. frozen or lightly precooked green beans

Simmer 15 minutes. Serve over hot steamed rice.

Crusty Mexican Bean Bake

Serves 6
350°
30 min.

Crust:

Combine:
- ½ c. flour
- ½ t. salt
- ½ t. baking powder
- 2 T. shortening or margarine
- ½ c. sour cream or yogurt (increase flour by 2 T. if using yogurt)
- 1 egg, beaten

Stir together. May be slightly lumpy. Spread thinly with back of spoon on bottom and sides of shallow greased 2-qt. casserole. Fill with bean mixture. (Crust may be stirred together in advance. Refrigerate until ready to use.)

Filling:

Brown in skillet:
- ¼ lb. ground beef
- ½ c. chopped onion

Add:
- 1 t. salt
- 2 t. chili powder
- ½ t. Tabasco sauce
- 2 c. undrained cooked kidney beans
- ¾ c. (6 oz.) tomato paste

Spoon into crust and bake at 350° for 30 minutes. Remove from oven. Sprinkle over or serve alongside:
- ½ c. grated cheese
- 1-2 c. shredded lettuce
- 1 c. chopped raw tomatoes

Savory Baked Limas

T·S
Serves 6-8
300°
About 5 hrs.

TS—Needs time not attention

Wash and soak overnight:
- 1 lb. dried baby lima beans
- 6 c. water

Preheat oven to 300°

Drain beans (reserve liquid) and place in 2 qt. casserole.

Add:
- liquid from soaking beans plus water to make 2 c.
- 2 c. diced, unpeeled tart apples
- ½ c. chopped onion
- ½ c. dark brown sugar
- 2 T. Worcestershire sauce
- ¼ c. molasses
- 2 t. salt
- 1 t. dry mustard

Stir well. Score or cut up:
- ¼ lb. salt pork or slab bacon

Bury pork deep in center of beans. Cover and bake about 5 hours. Stir once or twice and add water if needed.

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Add a small handful of lentils when cooking plain steamed rice—adds protein, texture, and flavor interest. Both cook in the same time. (Complementary protein.)

Baked Lentils With Cheese

Serves 6
375°
1 hr., 15 min.

Preheat oven to 375°
Combine in shallow 9x13" baking dish:
- **1¾ c. lentils, rinsed**
- **2 c. water**
- **1 whole bay leaf**
- **2 t. salt**
- **¼ t. pepper**
- **⅛ t. *each* marjoram, sage, thyme**
- **2 large onions, chopped**
- **2 cloves garlic, minced**
- **2 c. canned tomatoes**

Cover tightly and bake 30 minutes.
Uncover and stir in:
- **2 large carrots, sliced ¼" thick**
- **½ c. thinly sliced celery**

Bake covered 40 minutes until vegetables are tender. Stir in:
- **1 green pepper, chopped (optional)**
- **2 T. finely chopped parsley**

Sprinkle on top:
- **3 c. shredded cheddar cheese**

Bake, uncovered, 5 minutes until cheese melts.

Lentil-Barley Stew

Serves 6

Sauté in large pan:
- **¼ c. margarine**
- **¾ c. chopped celery**
- **¾ c. chopped onion**

Add:
- **6 c. water**
- **¾ c. lentils**

Cook 20 minutes. Add:
- **1 qt. tomatoes, canned**
- **¾ c. barley or brown rice**
- **2 t. salt**
- **⅛ t. pepper**
- **½ t. rosemary**
- **½ t. garlic salt**

Simmer 45-60 minutes. Add:
- **½ c. shredded carrots**

Cook 5 minutes, and serve.

Option:

Brown ¼ lb. boneless pork shoulder, diced, then add celery and onion and sauté until golden, omitting margarine. Proceed with recipe as given.

Gather Up the Fragments

1. Mash leftover beans and heat according to Refried Beans recipe, p. 101. Serve with rice or tortillas. (Complementary protein.)
2. Spread Refried Beans on toast, sprinkle with cheese, and broil until bubbly. (Complementary protein.)
3. Spoon hot leftover beans over slices of bread and top with a strip of bacon. Loved by our children as "bean bread." (Complementary protein.)
—*William Snyder, Akron, Pa.*
4. Combine leftover baked beans, cooked rice, and drained crushed pineapple plus ketchup, maple syrup, and dry mustard for flavoring. Heat together and serve. (Complementary protein.)
—*Emma Brubaker, Harrisonburg, Va.*
5. Add curry powder, turmeric, and cumin to leftover split pea or lentil soup, simmer until somewhat thickened, and serve over rice. (Complementary protein.)
6. Freeze leftover bean dishes in casseroles for convenient reheating later. Bake and carry to a potluck.
7. For a quick spicy soup, add tomato juice and chili powder to any leftover beans or lentils.
8. Add sautéed onions and green pepper and pineapple chunks to leftover baked beans. Bake until bubbly throughout.
—*Jocele Meyer, Brooklyn, Ohio*
9. Slice leftover soybean loaf and fry slowly in margarine until brown and crisp. Serve with ketchup.
10. Mash leftover beans and add to meat loaf.

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MORE BEANS, PEAS, AND LENTILS

DRIED PEA SOUP

2 cups dried split peas
3 quarts cold water
Ham bone or bacon
1/4 cup celery, diced
1 small onion, cut fine
2 tablespoons butter or fat
1 teaspoon sugar
2 teaspoons salt
1/4 teaspoon pepper
2 tablespoons flour

Pick over and wash peas. Soak them in cold water overnight, or for several hours; if quick-cooking peas are used, do not soak. Drain, place in soup kettle with the ham bone or bacon; add the cold water. Cover. Boil slowly but steadily 4 hours or more; add the celery and cook until the peas and meat are tender. Skim fat off top of soup. Heat 2 tablespoons butter or fat in a skillet, add the onions and brown, add flour and gradually a cup of the soup. Add to the rest of soup. Season to taste and serve with croutons. (It is a good idea to save the juices from canned ham when you have it, and add them to the pea soup for excellent flavor.)

LENTIL SOUP

Cover 2 cups lentils with 5 cups hot water; add ham bone.
Add: 1 stalk of celery with leaves, chopped,
1 medium onion, chopped
1 bay leaf
2 cloves
1 garlic clove, finely chopped
Simmer for 1 and 1/2 hours, or until lentils are tender
Remove bay leaf and cloves
Add salt and pepper to taste (about 2 teaspoons salt and 1/8 teaspoon pepper)

DRIED BEANS, BOILED

1 quart dried beans
1 tablespoon salt

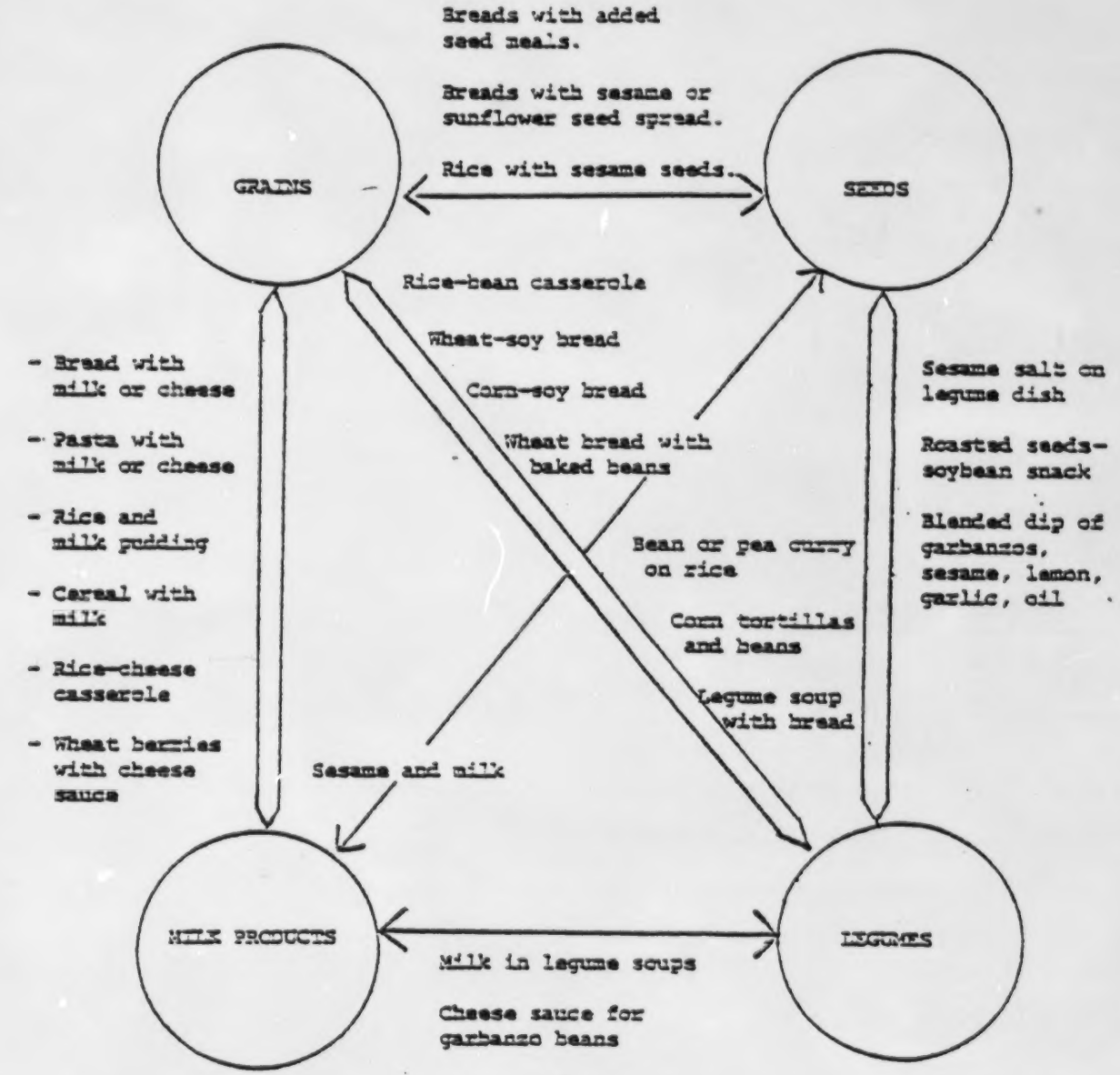
Wash beans. Soak overnight in cold water. Drain, cover with fresh salted cold water. Heat slowly, simmer until tender, adding hot water if necessary. Drain and reserve 1 cup of liquid. Make a brown sauce using the bean liquid; pour over the drained beans and serve hot.

BROWN SAUCE:
2 tablespoons butter
2 tablespoons flour
1/2 teaspoon salt
1/8 teaspoon pepper
1 cup bean liquid

Melt butter or fat and, if desired add a small onion, chopped; when brown, add the flour, let brown; add liquid gradually, stirring constantly. Season. Cook 5 minutes or until thickened.

CHART II

SUMMARY OF COMPLEMENTARY PROTEIN RELATIONSHIPS


Breads with added seed meals.
Breads with sesame or sunflower seed spread.
Rice with sesame seeds.
GRAINS
SEEDS
Rice-bean casserole
Wheat-soy bread
Corn-soy bread
Wheat bread with baked beans
Bean or pea curry on rice
Corn tortillas and beans
Legume soup with bread
- Bread with milk or cheese
- Pasta with milk or cheese
- Rice and milk pudding
- Cereal with milk
- Rice-cheese casserole
- Wheat berries with cheese sauce
Sesame and milk
Sesame salt on legume dish
Roasted seeds-soybean snack
Blended dip of garbanzos, sesame, lemon, garlic, oil
MILK PRODUCTS
LEGUMES
Milk in legume soups
Cheese sauce for garbanzo beans

Means complementarily more generally confirmed between several items in each group.

Means complementary relationship demonstrated only between a few items in each group.

Courtesy of Frances Moore Lappe' from Diet For A Small Planet, Ballantine Books, New York.

Menus subject to change.

SAN MATEO CITY SCHOOL DISTRICT LUNCH MENU

*FEBRUARY*1980*

FEBRUARY KINDERGARTEN MILK
18 days=$1.80
Exact change or Check

Free and reduced meals are available to qualifying students. Kindergarten brunches also available.

4 CORN DOG ON A STICK/MUSTARD French Fries Fruit Cocktail Chunky Peanut Butter Cookie Whole or Low-Fat Milk	5 BEEF & CHEESE PIZZA Mixed Green Salad/Dr. Chilled Pears Peanut Snack Whole or Low-Fat Milk	"Sugarless Wednesday" 6 OVEN BAKED CHICKEN Bu. Peas Cornbread Applesauce Whole or Low-Fat Milk	7 SPAGHETTI WITH MEAT & CHEESE Bu. Green Beans Fresh Orange Whole or Low-Fat Milk	8 BEEF & BEAN BURRITO Bu. Corn Frozen Fruit Punch Cup Chocolate, Whole, or Low-Fat Milk
11 HOLIDAY	12 HOLIDAY	13 MICHI ROLL (Japanese Egg Roll) Marinated Bean Salad Fresh Orange Half Peanut Butter Cookie Chocolate, Whole, or Low-Fat Milk	14 PIZZA Fresh Green Salad Italian Dressing Peaches Milk	15 CHEESEBURGER W/CATSUP French Fried Potatoes Celery Sticks Fresh Apple Half Chocolate, Whole, or Low-Fat Milk
18 HOLIDAY	19 HOT DOG ON A BUN/ MUSTARD & CATSUP Tater Tots Frozen Orange Juice Cup Chocolate, Whole, or Low-Fat Milk	20 SPAGHETTI WITH MEAT SAUCE Bu. Green Vegetable Diced Pears Celery Sticks w/Peanut Butter Whole or Low-Fat Milk	21 BEEF TACO WITH CHEESE Shredded Lettuce Salad/W Dr Fruit Cocktail Chocolate Chip Cookie Whole or Low-Fat Milk	22 CORN DOG ON A STICK W/MUSTARD Bu. Peas Bag of Raisins Chocolate, Whole, or Low-Fat Milk
25 BEEF & CHEESE ENCHILADA W/MILD SAUCE Buttered Rice Fiesta Slaw Applesauce Chocolate, Whole, or Low-Fat Milk	26 CHILI MACARONI Corn on the Cob Fresh Orange Half Oatmeal Raisin Cookie Whole or Low-Fat Milk	27 BAKED BEANS AND FRANKS Bu. Carrots ½Peanut Butter Sandwich Pineapple Chocolate, Whole, or Low-Fat Milk	28 CHEESE PIZZA Tossed Green Salad w/ Italian Dressing Fresh Apple Half Peanut Snack Whole or Low-Fat Milk	29 SLOPPY JOE ON A BUN French Fries w/Catsup Celery Sticks Peach Crisp Dessert Chocolate, Whole, or Low-Fat Milk

Energy Conservation Menu Bag Lunch 1

DELI DELIGHT SANDWICH

Carrot and Celery Sticks
Fresh Apple
Chocolate, Whole, or Low-Fat Milk

DEAR PARENTS, Students may purchase meals in advance on a minimum of a weekly basis. Meal tickets are validated as meals are ordered. The checks may be made payable to CAFETERIA ACCOUNT rather than the individual school. You may prefer to purchase 5, 10, 15, or 20 meals at one time. The rates are as follows:

5 Days: Grades 1-5 $3.25 Grades 6-8 $3.50
10 Days: Grades 1-5 $6.50 Grades 6-8 $7.00
15 Days: Grades 1-5 $9.75 Grades 6-8 $10.50
20 Days: Grades 1-5 $13.00 Grades 6-8 $14.00

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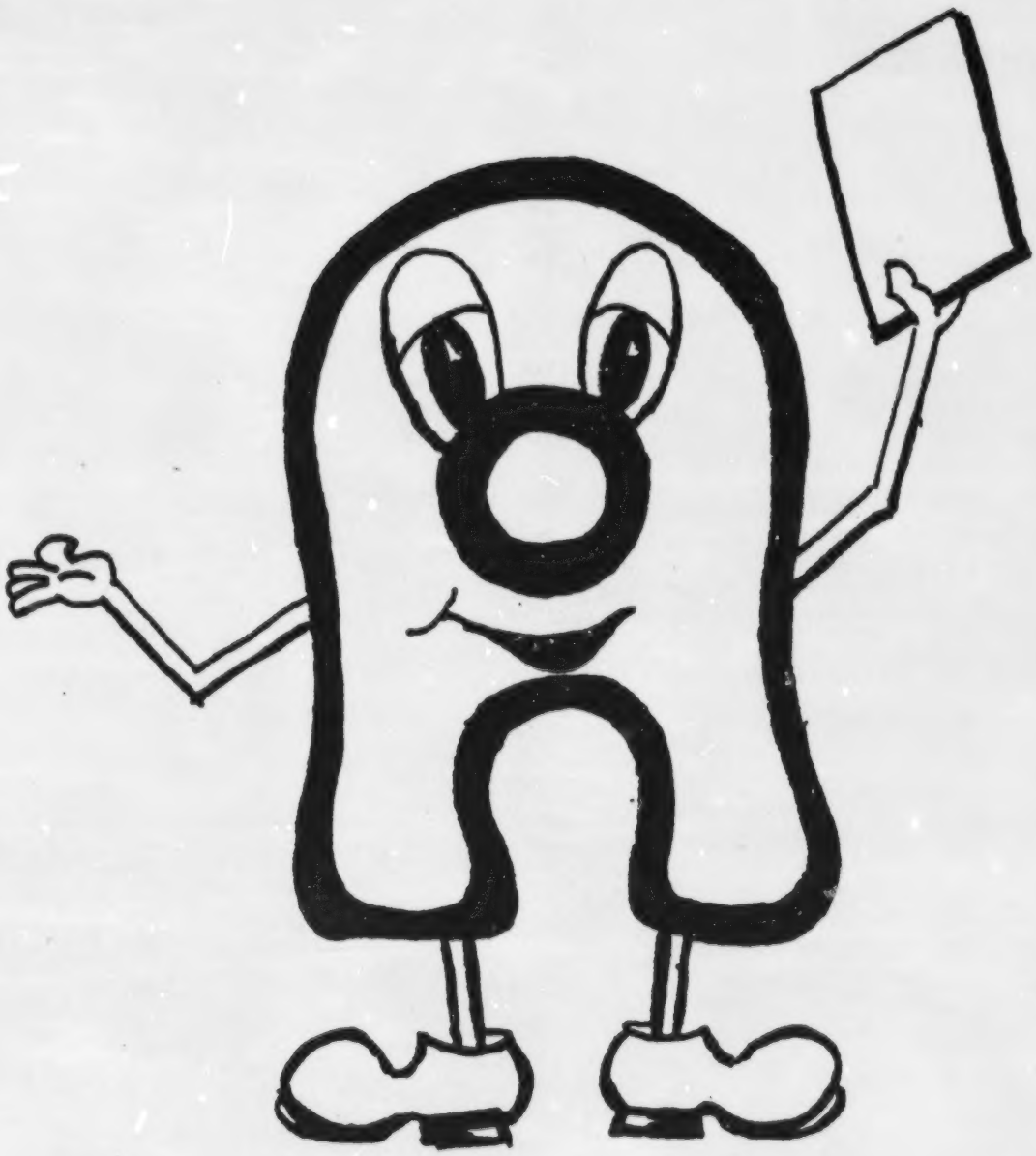


TYPE "A" LUNCH PATTERN

REVIEW
Step I: FOUR FOOD GROUPS

1. Meat Group (suggested foods)
2. Milk Group (suggested foods)
3. Fruits/Vegetable Group (suggested foods)
4. Bread/Cereal Group (suggested foods)

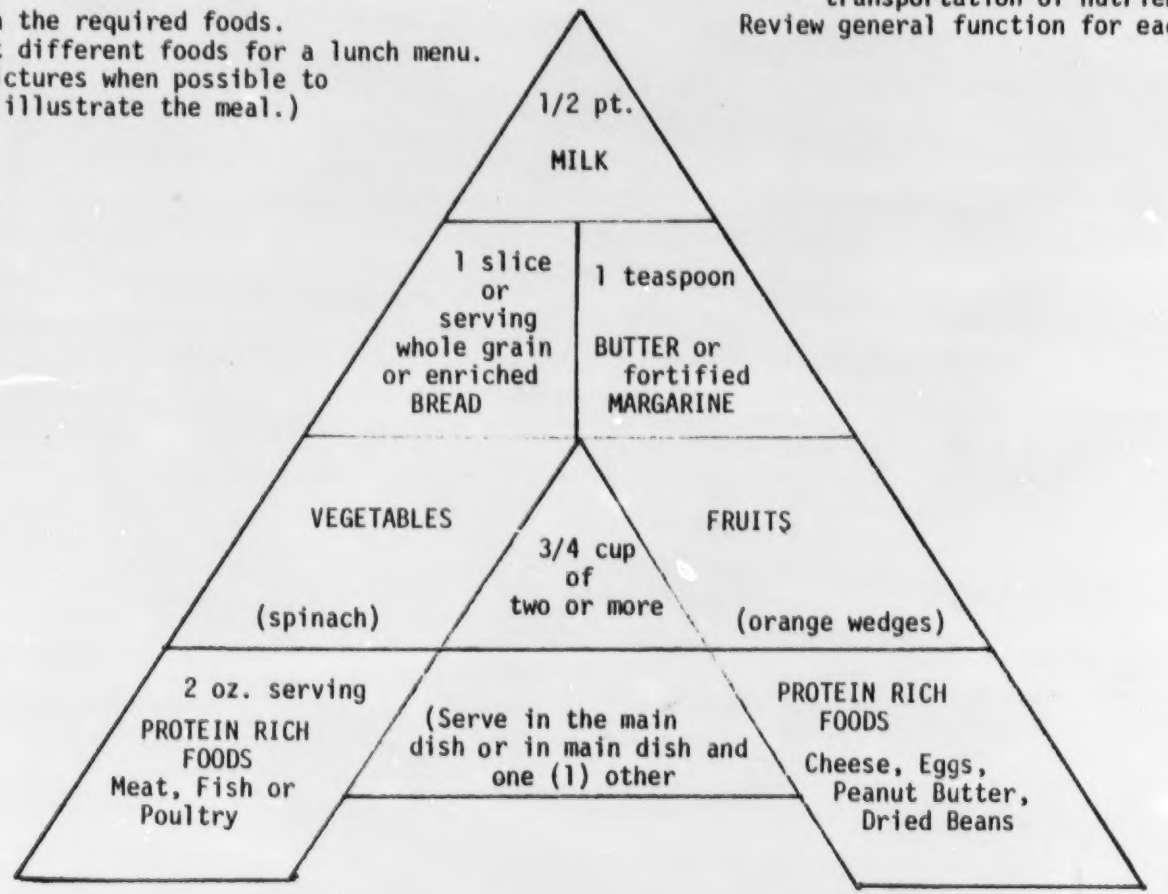
Step II: DRAW "A" AS SHOWN

Fill in the required foods.
Suggest different foods for a lunch menu.
(Use pictures when possible to better illustrate the meal.)

REVIEW
Step III: SIX MAJOR NUTRIENTS

1. Protein (growth/development)
2. Carbohydrates (energy)
3. Fats (energy, warmth, protection)
4. Vitamins (regulation of body processes)
5. Minerals (regulation of body processes)
6. Water (control of body temperature, transportation of nutrients)

Review general function for each nutrient.



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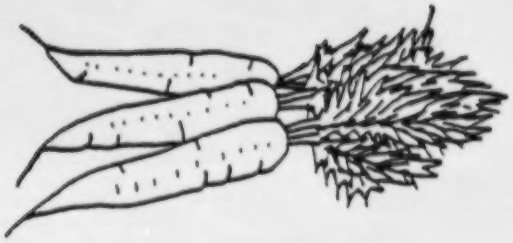

Why Serve Meals at School?

Recognizing that "you can't teach a hungry child," the Legislature of California has declared:

> It is the policy of the State of California that no child shall go hungry at school . . . and that schools . . . have an obligation to provide for the nutritional needs and nutrition education of all pupils during the school day. [Education Code Section 11921 (b)]

The Child Nutrition Facilities Act of 1975 is a product of these legislative findings: [Education Code Section 11921 (a)]

1. The proper nutrition of children is a matter of highest priority.

2. A demonstrated relationship exists between the intake of food and good nutrition and the capacity of children to develop and learn.

3. The teaching of principles of good nutrition in schools is urgently needed to assist children at all income levels in developing the proper eating habits essential for life-long good health and productivity.

Many children of all income levels fail to eat an adequate breakfast at home. Whether long bus rides, poverty, or rushed mornings at home are the reason for this, the result is the same: a hungry child who is not disposed to learn and who is distracted and fidgety and disruptive because of an empty stomach. Fewer children may miss lunch, but usually the child whose family cannot or does not provide a lunch is the child who has gone without breakfast as well.

Most school children are at school or are on their way to school during the times normally reserved for breakfast and lunch. Meals fit naturally into the school day. *Meals are a positive addition to the school day!*

- They help to create a sense of school as a community.
- They add an element of relaxed conviviality often lacking in schools.
- They help demonstrate to the children and their parents that the school really cares.
- They reduce absenteeism, and in the case of breakfast, tardiness.
- They reduce sickness related to hunger and poor nutrition.
- They provide a natural and essential foundation for any nutrition education program.
- They make children more receptive to learning.
- They reduce discipline problems.
- They allow low income families to spend more money on other meals.

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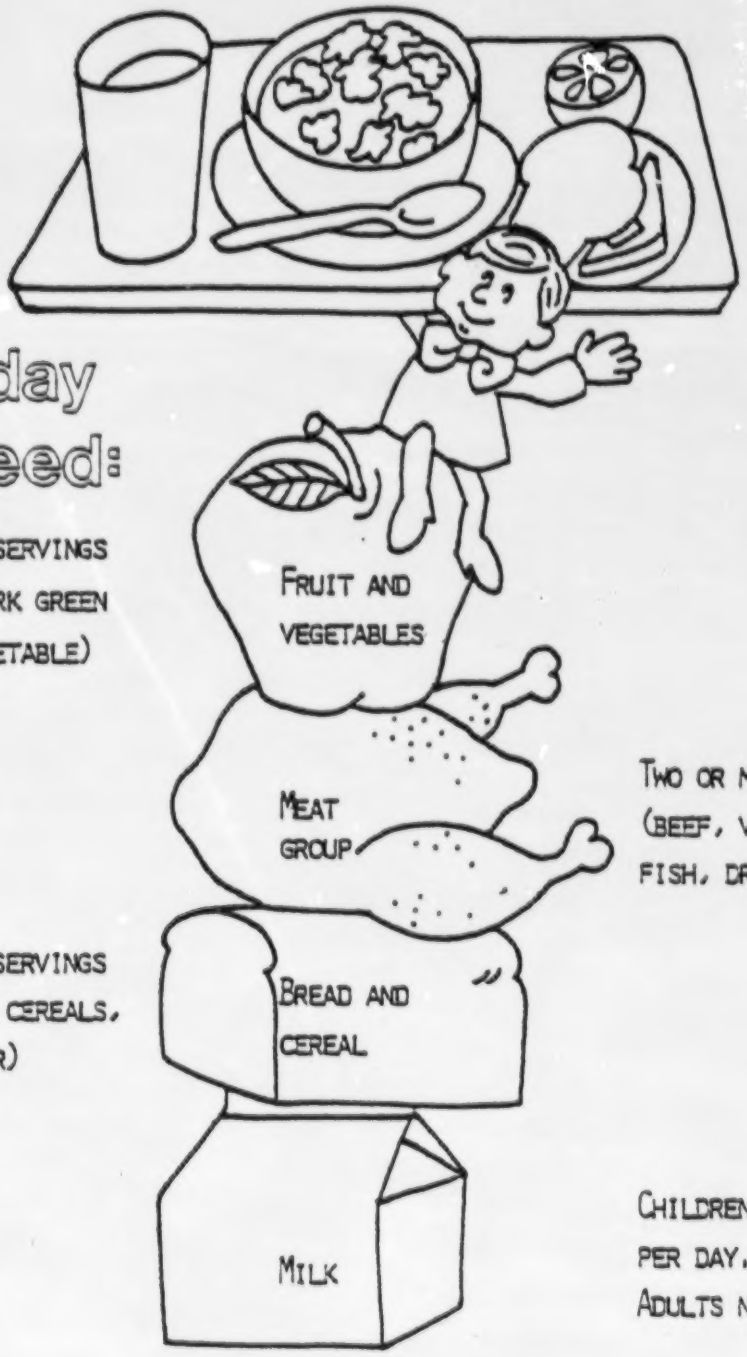
Balance Your Health

Enjoy a Type A Lunch Daily



Each day you need:

FOUR OR MORE SERVINGS (INCLUDE A DARK GREEN OR YELLOW VEGETABLE)

TWO OR MORE SERVINGS (BEEF, VEAL, PORK, POULTRY, FISH, DRY BEANS OR NUTS)

FOUR OR MORE SERVINGS (WHOLE GRAIN, CEREALS, ENRICHED FLOUR)

CHILDREN NEED 3 TO 4 CUPS PER DAY.
ADULTS NEED 2 CUPS PER DAY.

DID YOU EAT ALL THAT? 116

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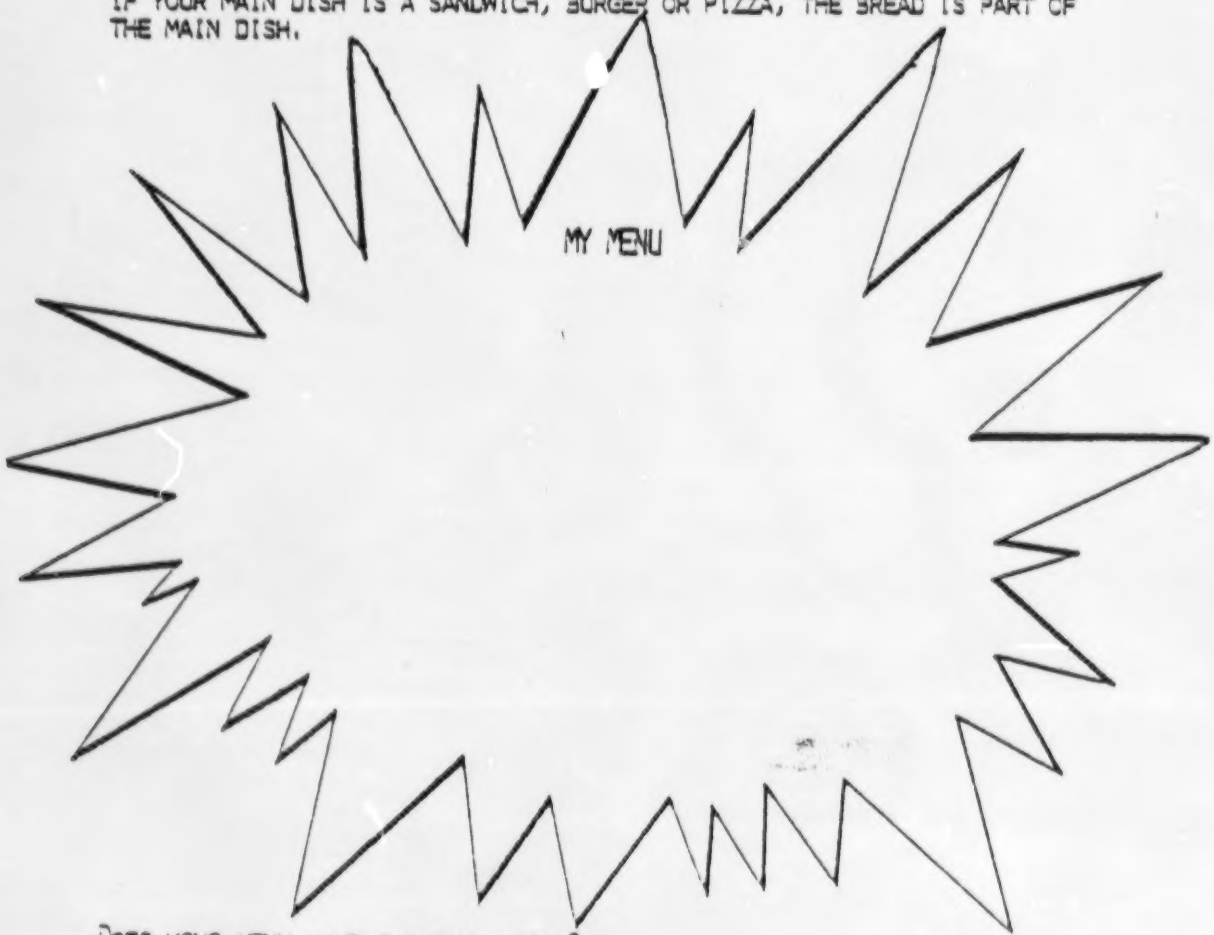
JAMES E. EVEY

Lunch Menu Contest

Rules: Write a "Type A" lunch menu that has all these parts:

1. Main Dish (meat-protein)
2. Vegetable (raw or cooked)
3. Bread or roll
4. Fruit
5. Carton of milk

If your main dish is a sandwich, burger or pizza, the bread is part of the main dish.



Does your menu have the five parts?

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"Nine Claims to 'Quick' Weight Loss" or "Nutritional Nonsenses"

Diet	Characteristics	Claims	Health Hazards	Comments!
ATKINS' "Super Energy" & "Diet Revolutions"	-High Fat, Low Carbohydrate (no sugars & starches) -Severely limits food choices	-Turns body into a "fat-burning" machine.	-Boring!, Water Loss, Headaches, Fatigue, Kidney Stress	"Dangerous!" The body needs carbohydrate for "brain food." High fat & cholesterol intakes are associated with heart disease.
STILLMAN'S "Quick Weight Loss" & "Inches Off" Diets	-High Protein, Low Fat, Low Carbohydrate -Severely limits food choices	-"Burns up more calories than a diet with normal amounts of fat and carbohydrate."	-Same problems and risks as Atkins' diets.	"Dangerous!" The body needs carbohydrate for "brain food." This diet is also low in calcium, iron & some vitamins.
Prolinn's "LAST CHANCE DIET"	-"Starvation"(no food) -Liquid Protein with vitamin & mineral supplement only	-"Fasting" that spares muscle; Fat is lost instead of muscle.	-Ketosis, Loss of Sodium, Starvation, Death!	"Dangerous!" This is dangerous even under a doctor's care. The body cannot run without fuel--food!.
The "MACROBIOTIC" Diet	-Comprised of 7 diets; drastically low in fluids	-"Expanded Freedom & Thinking" -"Brown rice is the only "perfect" food.	-Dehydration, Starvation, Death!	"Dangerous!" This diet is severely limiting & with each level it becomes severely deficient in virtually all nutrients.
The "HCG" Diet or "SIMEON WEIGHT REDUCTION" Diet	-Daily HCG shots -500 calories daily allowed	-The hormone "melts" fat.	-Headaches, Depression, Restlessness, Long term effects unknown	-The weight loss is due to the 500 calorie diet. No evidence exists that the hormone has any effect at all.
The "PRITIKIN" Diet	-Only 10% of calories from fat are allowed (30% of calories from fat are recommended	-To cure and prevent heart disease.	-Low in vitamin A & Vitamin D -Severely limits food choices	-There is no scientific evidence that this drastic measure is effective or necessary.
Rubin's "SAVE YOUR LIFE" Diet	-High Fiber	-To provide protection from heart disease and colon cancer.	-High Fiber intake can inhibit nutrient absorption -Diarrhea	-Rubin's data is based on limited research.
The "CRENSHAW Super Diet"	-Low calorie diet plus Cider Vinegar, Kelp, B_6, & Lecithin (in capsule)	-"Natural" weight loss with "natural" ingredients.	-There is little danger--except wasting money.	-This is an expensive, ineffective fad! There is NO scientific basis for this diet's claims.
The Jolliffe "PRUDENT" Diet	-Avoids excess empty calories, saturated fats & cholesterol; stresses whole grains & produce	-To increase chances of a healthy heart.	This diet provides many benefits; and when followed in moderation, it is ideal for weight control.	
"Simply Nutritious"	-Selecting a variety of healthful foods from the four food groups; portion control for weight control	-Gradual weight loss resulting in permanent weight control.	This diet is the nutritionally sound way to form good eating habits for the entire family.	

San Jose Unified Food Division, 1979, 1975 CA State Dept of Ed., Child Nutrition Facilities Act

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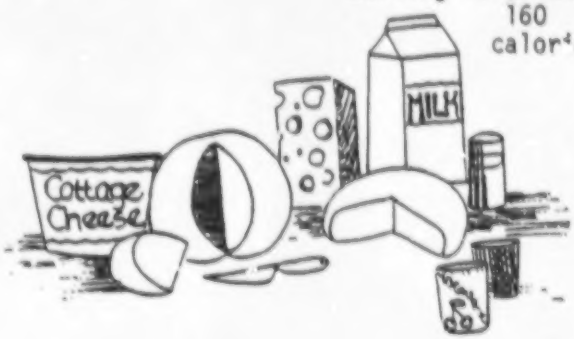
FOUR FOOD GROUPS

MILK GROUP foods are good sources of:

- Protein
- Riboflavin
- Calcium
- Vitamin A

SERVINGS

Four servings for teens; three for children; two for adults; each serving is about 160 calories



The following are calorically equal to one serving: 1 cup whole milk; 1 cup yogurt; 1½ oz. cheese; ½ cup lowfat cottage cheese.

MEAT GROUP foods are good sources of:

- Protein
- Fat
- Iron
- B Vitamins

SERVINGS

Two 2 oz. servings daily; each serving is about 200 calories

The following are calorically equal to 1 oz. meat; 1 oz. cooked lean meat, fish, or poultry; 1 egg, 1/2 cup cooked dried beans; 1 tbsp. peanut butter.

FRUIT/VEGETABLE GROUP foods are good sources of:

- Vitamins
- Minerals
- Fiber

SERVINGS

Four servings daily. Each one is about 40 calories.

The following are calorically equal to one serving: 1 2" apple, ½ banana, 1 orange, ½ c. cooked vegetable. Be sure to include a dark green leafy vegetable 3-4 times weekly for vitamin A; citrus fruit daily for vitamin C.

BREAD/CEREAL GROUP foods are good sources of:

- Carbohydrates
- B Vitamins
- Iron
- Fiber (in whole grain)

SERVINGS

Four servings daily Each one is about 70 calories.

Choose whole grain products, when possible. The following are calorically equal to one serving: 1 slice bread; 1 roll; 1 tortilla; ½ cup cereal, rice, or pasta.

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